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VOL. II.—14TH YEAR.

SYDNEY: SATURDAY, JULY 16, 1927.

No. 3.

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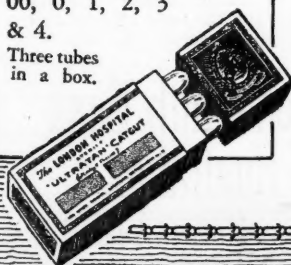


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# THE MEDICAL JOURNAL OF AUSTRALIA

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A REVIEW OF SOME RECENT WORK ON GOITRE.<sup>1</sup>

By D. GIFFORD CROLL, C.B.E., M.B. (Sydney),  
Brisbane.

For the matter which I have to place before you tonight I make no claim of originality; it is simply a presentation of what I was able to gather from various sources during my visit to the Dunedin Congress in 1927.

New Zealand is a wonderful field in which to study goitre and the men there have not failed to take advantage of it. So prevalent is goitre in the South Island that in some of the schools 60% of the children are affected thereby. It lessens of course with adult life, but is still so common that, in walking down the principal street of Dunedin, I was able to count twelve persons with goitre in five minutes, this in spite of scarves and various other means of disguising it.

Before visiting Dunedin, my ideas upon the various types of goitre and their treatment were very hazy and confused. They are not yet by any means clear, but I have learned a great deal. I shall not add to the confusion by making any further classification, but I shall try to tell you as clearly and concisely as possible that which is known and that which is not.

All study of goitre must be based upon a clear understanding, so far as is known, of its aetiology and pathology. Knowledge of its aetiology has recently been greatly advanced by the work of Professor Hercus, of Otago University. He has shown that throughout New Zealand the incidence of goitre fluctuates consistently with the amount of iodine in the soil. In those districts where the soil is poor in iodine, the vegetables, fruits, milk, butter and meat are deficient in iodine and the incidence of goitre amongst men, animals and fish is proportionately high. He has also learned that in pre-European days the Maoris recognized that people living in those districts suffered from goitre. The land most likely to be deficient in iodine is of a sandy or gravelly character such as river flats. From this soil the iodine is easily washed out by the rains. Clay retains it better and humus best of all. Contrary to previous ideas he found that in the limestone country the iodine percentage was generally high and the goitre incidence low. Secondary factors of course play an important part; the iodine deficiency merely makes the patient susceptible, the secondary factors determine the attack. Examples of these secondary factors are sepsis, pregnancy, mental strain *et cetera*. The work of Professor Drennan, also of Otago University, has thrown much light upon the pathology of goitre and that we will now consider.

## Pathology.

In the first place the normal thyroid gland consists of two main tissues, the glandular or secreting tissue and the vesicular or colloid-storing tissue which will in future be referred to as the glandular and colloid tissues. Thyroxin appears to be formed

by the glandular and stored in the colloid tissue before being used. It also contains of course the usual nervous, vascular and fibrous tissues common to all organs, but in this case the vascular tissue is abnormally preponderant. The thyroid contains about 0.46 to 0.84 milligrammes of iodine per gramme of fresh gland. This is much higher than any other tissue in the body. Now Drennan has shown that in all goitres from the very earliest stages and before any enlargement can be detected hypertrophic and degenerative changes occur. There is probably an exception to this in the small goitres of puberty and pregnancy. The hypertrophy consists in an increase of either the glandular or colloid tissue. The degeneration consists of fibrous changes, hæmorrhages and the formation of cysts. When a goitre begins to form, the first changes are undoubtedly hypertrophic and the hypertrophy may be of the glandular or colloid tissue, generally both, but why it should sometimes be one and sometimes the other I do not know. Whichever it is, the hypertrophied tissue is always poor in iodine, generally in proportion to the amount of the hypertrophy and so it is evidently at first a purely compensatory change in order that the requisite amount of iodine may be supplied to the body. Degenerative changes appear to follow quickly upon the hypertrophy and so further hypertrophy occurs to take its place unless the deficient supply of iodine is made good. In the condition above described no constitutional effects have been felt by the body and the only symptom is an enlargement of the thyroid.

Constitutional effects, however, may easily occur. In the first place the compensation may be insufficient or the degeneration too rapid and symptoms of myxœdema appear. On the other hand the supply of iodine being restored and the hypertrophy remaining, but being richer in iodine than it was before, too much thyroid secretion may be thrown into the system and we get symptoms of hyperthyroidism. This condition is frequently called a toxic adenoma, although personally I think it would be better to abandon that term, for as you see it does not differ essentially from the other phases, but only in the concomitant circumstances, such as supply of iodine, size of the gland *et cetera*.

There is a possible aspect here which has not been proved or disproved, that is that with a deficient supply of iodine the gland may go on secreting a substance deficient in iodine, but normal in other properties and this must be secreted in such quantities to compensate for the deficiency in iodine that the other properties produce toxic symptoms in the body. If such were the case and the patient were given iodine temporary relief might be expected, but very soon there would be an excessive amount of normal secretion and symptoms of hyperthyroidism. The obvious treatment would be to give thyroid extract and so rest the secreting gland. The correctness of this treatment has been largely substantiated by experience.

We now come to the final condition of exophthalmic goitre or dysthyroidia and here there is an essential change in the pathological condition. The hypertrophy in this condition consists entirely of

<sup>1</sup>Read at a meeting of the Queensland Branch of the British Medical Association on May 6, 1927.



the glandular tissue and the colloidal tissue practically disappears. The hypertrophied tissue is as before poor in iodine, in fact almost deiodized if I may coin such a term and the onset of symptoms was probably caused by an imperative demand by the body for iodine, so imperative that there was no time to store it in colloidal tissue before it was issued. It seems that if the secretion is issued to the body in this immature state, toxic symptoms of a different nature to those of hyperthyroidism are immediately produced or the theory enunciated above may be applied. The essential features of this toxæmia which distinguish it are exophthalmos, a peculiar restlessness with purposive but useless movements and the occurrence of crises in which all the symptoms are exaggerated. If iodine in large doses be given to such a patient, the symptoms are immediately relieved and a remarkable change occurs in the gland—it begins to form colloid tissue and to store its secretion. But considerable enlargement has occurred and we convert a dysthyreoidia into a hyperthyreoidia.

#### Treatment.

I will now refer briefly to the treatment of these various conditions of the thyroid. In the first place we must consider the preventive aspect and that is what so greatly concerns them in New Zealand at present. It would at first appear easy to give iodine to all school children in an affected district and so compensate for the deficiency. This was done in some goitre districts in America, Switzerland and New Zealand with satisfactory results, but it soon appeared that there was a very serious pitfall. If iodine is given, except in physiological doses, to a person suffering from goitre it appears to have an irritating effect upon the glandular tissue causing further hypertrophy and so converting a harmless into a toxic goitre. This is much more liable to occur in adults than in children, but an outbreak of toxic goitre in the districts where it was tried, caused a cessation of the practice. It was found that the minimum daily requirement was one hundred microgrammes and that the maximum daily amount which can be considered physiological and which thus is not liable to produce toxic symptoms, was seven hundred microgrammes. The problem therefore resolves itself into giving between one hundred and seven hundred microgrammes per day to every person within the affected areas. There are various suggestions such as iodized manure, iodized water supply, food *et cetera*, but in all it is difficult to get neither more nor less than the required amount.

The proposal which seems most promising at present is iodized salt. The total amount of salt used daily by each person for all purposes including cooking is fairly constant at about ten grammes and it has been calculated that if salt be iodized 1 in 250,000, each person will receive one hundred microgrammes per day. This would be sufficient if there were a total lack of iodine in the food and there would be no danger of exceeding seven hundred microgrammes per day where the soil was normal in iodine. Its worst failing is that the iodine

is lost in cooking unless the water is kept and used for soups, stews *et cetera*. The removal of all septic foci and the avoidance of overwork or worry are of course indicated as preventive measures, these being secondary factors in the causation of goitre.

Let us next consider the treatment where goitre has actually occurred. It is first of all desirable to ascertain whether there is an increase or a deficiency of thyroid secretion and this can best be done by taking the basal metabolic rate. If there is a decrease the indications for giving of thyroid extract are clear and the dose must be regulated until the basal metabolic rate is normal. It then might be well to put the patient on physiological doses of iodine.

If the basal metabolic rate is normal, there is not much to be done except to see that the patient is getting an adequate physiological dose of iodine. It is in such persons especially in adults, that there is so much danger in giving therapeutic doses of iodine and so raising the metabolic rate and perhaps irritating the glandular tissue. It is obviously impossible to reduce the swelling where degenerative changes have occurred, but the hypertrophic tissue may subside if supplied with adequate iodine without irritation.

The next class of patient is one in whom the basal metabolic rate is raised and our first objective must be to reduce it to normal. In such a patient rest and removal of septic foci are indicated, small doses of thyroxin may be given so as to put the gland to rest for a while and there is a prospect that it may subside. If so, the subsequent treatment will be as in the previous condition. Should the gland not subside, surgical interference by removal of a part of the hypertrophied gland offers the best prospect of success and should not be unduly delayed as the condition has a degenerating effect upon the heart. When the basal metabolic rate has been reduced by surgical interference, treatment should proceed as before.

We now come to those cases of exophthalmic goitre or dysthyreoidia and here the treatment is imperatively surgical and should not be delayed except to put the patient in the best condition to withstand the operation. The necessity for avoiding delay is that the condition will almost inevitably require operation in the end and the longer it is delayed, the greater the danger of operative interference. It is questionable if we should even wait to remove septic foci, for it has been shown that this will seldom cure the condition and the delay entailed will increase the risks. It is better perhaps to remove them afterwards. The only justifiable delay is that which is necessary for the improvement of the patient's condition by rest and for the administration of iodine. This latter, however, must not be commenced until operation has been definitely decided upon and the approximate date fixed. The reason for this is, as previously shown, that when iodine is administered to these patients, the condition is converted from a dysthyreoidia to a severe hyperthyreoidia. Whilst the change is occurring, that is to say when the dysthyreoidia is relieved and before the hyperthyreoidia has properly developed,

the patient's condition is remarkably good and favourable for operation and this satisfactory state cannot be recovered.

The crises which may occur either before or after operation, may be severe, dangerous and fatal and the symptoms vary. The treatment of these crises must be prompt and thorough. There are two measures of treatment at our disposal. One is by giving iodine in large doses and in this condition there must be no tentative administration of iodine—it must be given boldly or the patient will be lost. We do not know exactly how it acts, but probably by relieving the insistent demand of the body for iodine and so stopping the flow of immature thyroid secretion. Needless to say if a crisis is dealt with in this way beforehand, operation must not be long delayed, for the process of conversion from dysthyreoidia to hyperthyreoidia will have been started by the iodine.

Another and probably better method of treatment is by the intravenous administration of thyroxin. This is said to be prompt and efficacious and almost dramatic in its effect. It probably acts by immediately relieving the need for iodine and by supplying the body with normal thyroid secretion in place of the immature material which it has been receiving, and also by putting the thyroid gland temporarily at rest.

If for some reason operation could not be undertaken, it would probably be worth while to attempt to relieve a patient with exophthalmic goitre by small doses of thyroid extract given regularly. They might put the thyroid at rest and would probably obviate the onset of crises.

It is rather strange that the operation of partial thyroidectomy should be successful in such a large proportion of cases. Some cases do recur, of course, but one would expect that, with a thyroid so deranged in its function and so urgently in need of iodine, removal would result only in hypertrophy and recurrence in the remaining portion, but the fact remains that it is not generally the case and the reason thereof we do not know.

#### MALLEOLAR FRACTURES (SOMETIMES CALLED POTT'S FRACTURE) AND SUPRA-MALLEOLAR FRACTURES.<sup>1</sup>

By C. E. CORLETTE, M.D., Ch.M.,  
Surgeon, Sydney Hospital; Lecturer in Clinical Surgery,  
University of Sydney.

I HAVE been asked to say something about Pott's fracture, meant in the present popular sense. Popular usage has conferred the term on malleolar fractures in general, but the true Pott's fracture, as suffered by and described by Percival Pott was an abduction fracture with deformity. It may be regretted that the term has become so widened, but now, if one means a classical Pott's, one has to say so explicitly. Perhaps it is better to speak of the whole class as malleolar fractures. Of these there are many varieties.

It is convenient, when discussing malleolar fractures, to extend our attention to cases of supra-malleolar fracture, because the treatment of supra-malleolar fracture presents difficulties very like those met with in some malleolar fractures, and because they may be overcome by treatment on very similar lines.

I may here put in a note to explain the meaning given to certain terms. Adduction is medial flexion; abduction is lateral flexion. As to eversion, one has to choose between two different meanings. Some writers use it as equivalent to abduction. Others use it as equivalent to outward rotation of the foot on a vertical axis. This is very confusing. Etymologically, the word eversion means "turning out." It has for innumerable years been used to describe the position assumed by the foot in fracture of the neck of the femur. That is a position in which the foot points outwards. I think, therefore, that logically the term should mean the same when describing fractures at the ankle, and that is the way I use it. But in relation to fractures at the ankle, abduction usually implies more or less eversion, and it does not seem necessary to say so every time.

#### FUNDAMENTAL SURGICAL ANATOMY.

A short sketch of the ligamentous apparatus of the ankle will be useful before going farther (see Figures I, II, III, IV).

The distal portion of the fibula is held to the corresponding extremity of the tibia at its posterolateral aspect, in the fibular notch, by four sets of fibres, the interosseous, and the anterior, the posterior, and the distal ligaments of the lateral malleolus. The interosseous ligament is practically a continuation and thickening of the interosseous membrane. It is the strongest of the four ligaments. Its fibres are short and more or less horizontal. The anterior and posterior ligaments have a direction running obliquely downwards from the adjacent tibia to the lateral malleolus. The distal is more transverse and lies beneath the posterior ligament.

The front of the ankle joint presents a wide and relatively thin and weak ligament extending from the tibia to the anterior part of the neck of the talus, and between this and the neck of the talus is a pad of fat. The anterior ligament extends across the front practically from malleolus to malleolus. Its fibres are long enough to permit of considerable movement before they are put on the stretch. But it tears easily.

From the malleoli on either side of the ankle proceed a series of very strong ligamentous connexions to the neighbouring tarsal bones. The talus pivots in the ankle joint, and the foot is suspended like a swing on either side from the malleoli through these ligaments which, together with the malleoli, take up torsion strains and adduction and abduction strains.

The fibres attached proximally to the medial malleolus constitute the deltoid ligament. This is

<sup>1</sup>Read at a meeting of the Section of Surgery of the New South Wales Branch of the British Medical Association on September 2, 1926.

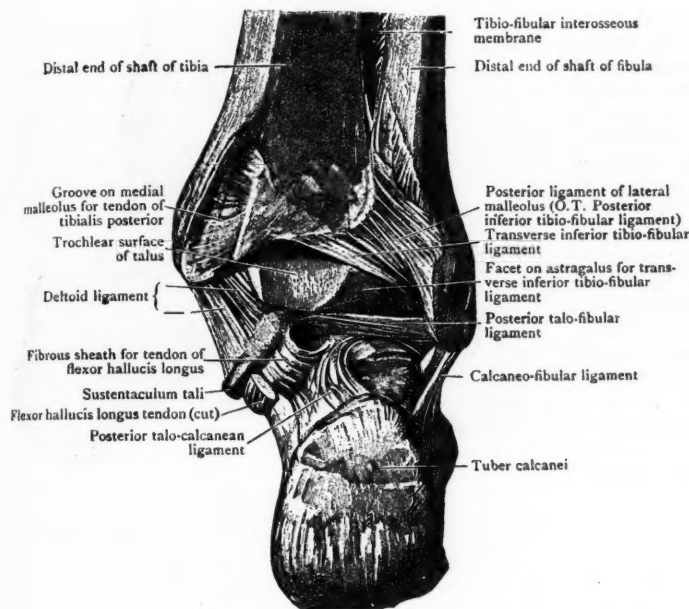


FIGURE I.

From Figure 294 of Cunningham's Text-Book of Anatomy, Fifth Edition. Ankle-joint dissected from behind with part of the articular capsule removed.

described as spreading fanwise from the malleolus to the parts adjacent. Anteriorly fibres spread to the neck of the *talus* and to the navicular, and in front it is contiguous with the anterior ligament. Posteriorly fibres connect the posterior part of the malleolus with the postero-medial portion of the *talus*. But the strongest band is that extending from the neighbourhood of the tip to the calcaneus, where it is inserted into the *sustentaculum* or *processus minor*. This calcaneo-tibial band is so strong that it seldom ruptures, the tip of the malleolus breaking off first. I think it is necessary to emphasize this because the student reading the textbooks will get no idea of the comparative rarity of rupture of this *fasciculus*. He is likely to get the impression that it is quite common. Careful study of a long series of skiagrams shows the opposite.

It is probable, however, that the anterior talo-fibular fibres of the deltoid ligament are often torn in abduction fractures. There is a fracture of the tip of the medial malleolus and in front of that a rupture of part of the anterior band of the deltoid ligament. This then extends into the anterior ligament and may reach as far as the lateral malleolus. I have demonstrated this in a dissection of an experimental fracture on the *cadaver*. It may be inferred on the living from inspection of skiagrams.

The lateral talo-fibular ligaments are very strong and radiate in three bands, the anterior talo-fibular, the calcaneo-fibular or middle, and the posterior talo-fibular. The anterior band connects the anterior border of the lateral

malleolus with the *talus* in front of its lateral articular surface. This band is relatively short and its malleolar attachment is close to that of the anterior tibio-malleolar ligament. The middle band is a very strong ligament attached proximally to the tip of the lateral malleolus. It slopes backwards distally to its attachment at the side of the *calcaneus* behind the groove for the peroneal tendons. Stronger even than the calcaneo-fibular band is the posterior talo-fibular, which is attached to the medial aspect of the lateral malleolus, and runs in an approximately horizontal direction, and slanting backwards and inwards, to be attached to the lateral tubercle of the posterior process of the *talus*, the tubercle which in some subjects exists as a separate bone, the *os trigonum*.

Passing now to the back of the ankle joint, we find that the only ligaments worth mentioning run in an approximately horizontal direction, and these consist of the *fasciculi* already reviewed in connexion with the malleoli. On the medial side there

are the posterior fibres of the deltoid ligament passing to an attachment at and near the medial tubercle of the posterior process of the *talus*, and on the lateral side there is the strong horizontal posterior talo-malleolar band of the lateral ligament which has just been described.

In examining cases and skiagrams of malleolar fractures, I have been accustomed to pay particular attention to the evidence from which one may derive information as to the state of the ligaments. According to my experience, I think I can say with a great degree of safety that in abduction fractures tearing of the lateral ligaments need not be expected, certainly not complete tearing. When one considers the mechanism of abduction fractures, and the fact that the foot hinges outwards, one can readily understand the reason why these ligaments remain intact. But in adduction injuries

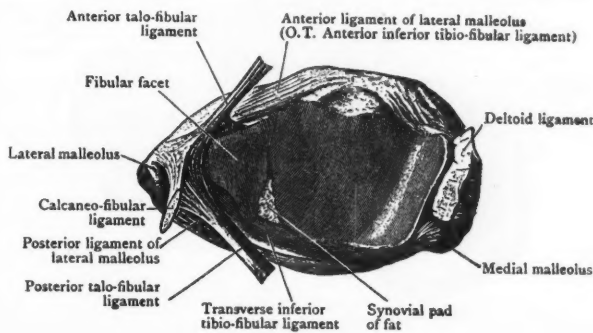


FIGURE II.

From Figure 295 of Cunningham's Text-Book of Anatomy, Fifth Edition. Articular surfaces of tibia and fibula which are opposed to the *talus*.



the anterior talo-fibular band of the lateral ligament is probably torn in a proportion of the cases, perhaps in a good many of them. This corresponds to the tear of the anterior fibres of the deltoid ligament in abduction fractures. But as regards the middle band, the tip of the lateral malleolus, sometimes a good deal more than the tip, is pulled off before the ligament will break, just as the tip of the medial malleolus is pulled off in abduction fractures. As an alternative to the tip of the malleolus, it has been recorded that the bony tubercle on the side of the *calcaneus* to which the distal end of the band is attached has been pulled off; but I have not personally seen an instance.

In other cases of adduction fracture the tip of the lateral malleolus is not pulled off, but it breaks higher up. I am inclined to think that in some of these cases, perhaps in most of them, the fracture is caused by the impact on the malleolus, at or near its tip, of some resistant object such as the ground, the structure of a motor car or the like.

#### EXPERIMENTAL INVESTIGATIONS.

In the year 1921 I carried out a series of experiments on the *cadaver* in order to learn the mechanism of fractures at the ankle joint and the conditions produced in the bones and ligaments. I was only partially successful in reproducing types. I was unable to reproduce the severe type characterized by a diastasis or separation of the fibula from the tibia, nor did I get any posterior split fractures with posterior dislocation of the foot. This was interesting in view of the statement of Stimson that the fracture with diastasis could be easily produced on the *cadaver*. My own experience, therefore, was different. And it is not easy to hold the foot or the heel in a vice while applying sudden violence.

I was able to satisfy myself as to some points, however. I proved by actual experiment that the fibula could be fractured just above the tibio-fibular

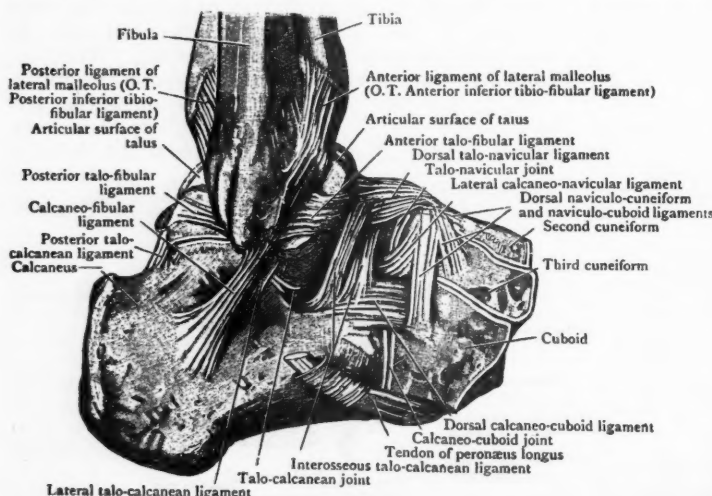


FIGURE IV.

From Figure 297 of Cunningham's Text-Book of Anatomy, Fifth Edition. Ligaments on the lateral aspect of the ankle-joint and on the dorsum of the tarsus.

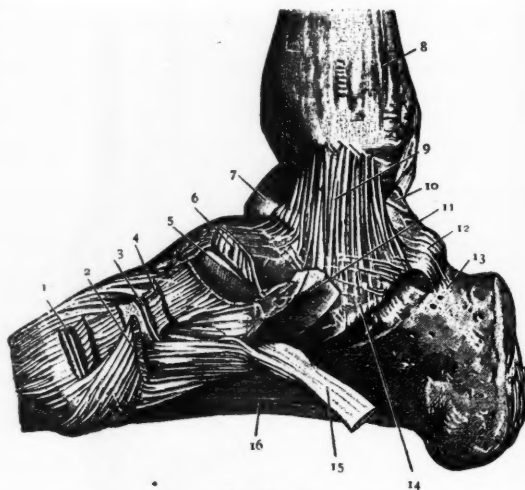


FIGURE III.

From Figure 296 of Cunningham's Text-Book of Anatomy, Fifth Edition. Ankle and Tarsal Joints from the Medial Aspect.

1. First tarso-metatarsal joint (opened).
2. Tendon of tibialis anterior muscle (cut).
3. Medial naviculo-cuneiform joint (opened).
4. Dorsal naviculo-cuneiform ligament.
5. Head of talus.
6. Dorsal talo-navicular ligament.
7. Trochlear surface of talus.
8. Medial malleolus.
9. Deltoid ligament of the ankle.
10. Trochlear surface of talus.
11. Groove for tendon of tibialis posterior muscle on inferior calcaneo-navicular ligament.
12. Groove and tunnel for the tendon of flexor hallucis longus muscle.
13. Calcaneus.
14. Sustentaculum tali.
15. Tendon of tibialis posterior muscle (cut).
16. Long plantar ligament.

ligaments by a sudden forcible lateral flexion (abduction) of the foot by which the side of the *calcaneus* was made to impinge on the lower end of the fibula. There was probably some degree of force acting from within to bend the fibula outwards, but

I do not think this played an important part. By dissection of the parts afterwards I found that this fracture had been produced without rupture of any ligaments at all. This was a transverse fracture, and above the malleolus. When a fracture involves the malleolus itself, it is usually oblique, with the highest point of the distal fragment behind. But in cases where it appears to have been pulled off by the middle band of the lateral ligament, one finds a horizontal line of fracture. In eversion with abduction, the posterior band comes into action. This would tend to produce obliquity in a fracture of the malleolus and it is the probable explanation of the obliquity that is actually found.

In further experiments I found that in more severe injuries, not merely the medial malleolus fractured, but the lesion continued anteriorly so as to rupture the anterior



ligament right across the front. In one experiment I produced a fracture which I do not remember to have seen in the living subject, though it has been recorded. In this case a fracture of the *sustentaculum* replaced fracture of the medial malleolus. Such a fracture makes one realize the very great strength of the ligamentous band involved.

I have come to believe that in the fractures in which there is a diastasis of the tibia and fibula, it is quite as likely as not that the fibula fractures before the ligaments rupture. By the fracturing of the fibula the malleolus is levered outwards, and as the force continues, the ligaments give way. On the other supposition the ligaments are torn apart first, and then the fibula breaks by being bent outwards. The latter is the explanation usually given by writers who discuss the mechanism of production. Now I think it can occur either way.

I have made no experiments on the production of fracture by adduction, but I believe the medial malleolus may be considered in these cases to be knocked off (see Figures V, VI, VII). The line of fracture is not horizontal, but oblique, running upwards and medially, and it includes the whole malleolus and more. There is, therefore, a much larger mass of bone broken off than is usual in abduction fractures. The separated fragment may be displayed upwards and medially, but the displacement is relatively moderate. I have already discussed the conditions of fracture of the lateral malleolus in these cases. The problems of treatment offered by fractures of the adduction type are not usually serious or difficult to meet, and good results are the rule.

#### FRACTURES CAUSED BY ABDUCTION OR ADDUCTION AND EVERSION.

Since our most difficult problems are encountered in connexion with the abduction type (in which I include abduction-eversion), they demand our chief attention.

It will tend to clarify our ideas if we begin by attempting to classify fractures of this general type into classes, of which I would recognize five.

##### Class I.

Simple fracture of the fibula above the malleolus or obliquely so as to include part of the malleolus, and without serious tearing of ligaments or serious displacement (see Figure VIII).

##### Class II.

A simple fracture of the fibula associated with a transverse fracture of the medial malleolus (see Figures IX, X, XI, XII). This may be taken usually to involve some tearing of ligamentous fibres in front of and adjacent to the fracture in the medial malleolus. There can be but little displacement of the malleolus if none of these anterior fibres are torn. The foot is more or less abducted and everted. The lateral ligaments are not ruptured. The fibular fracture is more often obliquely through the malleolus than above it. When the fracture runs obliquely through the malleolus, there is often some backward dis-

placement of the broken-off fragment, but it varies greatly. The obliquity runs always from behind and above, forwards and downwards.

##### Class III.

In fractures of Class III the lateral malleolus is broken off and the tibio-fibular ligaments are torn so that the fibula is no longer bound to the tibia (see Figures XIV and XV). The distal fragment of the fibula is displaced laterally and backwards. The medial malleolus is fractured and separated from the tibia. The anterior ligament is widely torn, the foot is everted and abducted and the heel carried backwards. The skin is stretched over the projecting edge of the tibia where the medial malleolus was broken off. The lateral ligament is intact. This variety is sometimes called Dupuytren's fracture, but it is better to drop that name, since it does not coincide with present-day French nomenclature. There does not seem to be any real difference between the French Dupuytren's and our Pott's, as the names are popularly used.

##### Class IV.

In fractures of Class IV there is, (a) fracture of the medial malleolus, (b) fracture of the fibula above, or through the lateral malleolus. But instead of a separation of the lateral malleolus from the tibia by rupture of the tibio-fibular ligaments, there is, (c) a splitting off of a portion of the back of the tibia including the articular margin. This maintains its ligamentous connexion with the lateral malleolus, and if the lateral malleolus goes back, it goes back with it. The anterior tibio-fibular ligament may be ruptured, but not the interosseous nor the posterior and distal tibio-fibular bands. There are posterior marginal fracture cases in which displacement is slight, but the larger, severe cases are the ones to which our attention is here chiefly directed. In these more severe cases the foot is displaced backwards, abducted and everted. The heel is prominent, and the skin is stretched over the prominent medial edge of the tibia. The anterior capsule is widely torn, but the lateral ligament goes back with the foot and remains unruptured. We find, therefore, that the three broken fragments of bone follow the foot, being carried by the ligaments (see Figures XVI, XVII, XVIII, XIX).

Posterior marginal fracture of the tibia occurs occasionally without fracture of the fibula, showing that the fracture of this fragment is due to its being knocked upwards and backwards by the *talus* just as in adduction fractures the medial malleolus is knocked off by the same bone. In these minor cases there may be little or no displacement of the fragment, probably because it held on by an intact distal ligament (see Figure XX). In the graver cases the posterior fragment involves more than the margin, and presents a triangular section in the lateral-view skiagram. The fragment is usually thicker towards its lateral aspect, where it is bound to the malleolar fragment. I conjecture that in these cases the mechanism is a simultaneous blow

against the posterior margin of the tibia by the *talus* and a pull on the lateral end of the piece by the tibio-fibular ligaments there attached. The pull comes into action through fracture of the lateral malleolus as the foot swings back and twists round into eversion. The anterior tibio-fibular ligament probably ruptures before the malleolus swings back, if the fracture is above the malleolus, but it need not be torn if the line of fracture is obliquely through the malleolus.

Not much is said in the ordinary textbooks about these Class IV fractures, and I have seen them described as rare. My own experience is to the contrary. They are rather frequent. They are often productive of great disablement, and of all the varieties they are by far the most difficult to treat satisfactorily. The results obtained in cases with much initial posterior displacement, under current methods of treatment, are appalling (see Figure XVI).

#### Class V.

Class V comprises compound fracture dislocations.

#### TREATMENT.

We are now ready to discuss treatment. This must be adapted to the special requirements of each case. There is no rigid formula to follow. It is therefore necessary that the practitioner shall have some sense of what is required, and knowledge as to how to do it. This knowledge must be more than a vague impression.

At the outset give fifteen milligrammes (quarter of a grain) of morphine hypodermically. Let it be a standing rule that the limb is to be elevated. Elevation relieves pain and minimizes swelling and effusion of blood.

Let the limb be examined by X rays as soon as possible, and reduce the fracture as soon as possible. Reduction is very urgent in cases of great displacement, and especially when the skin is tightly stretched over the medial edge of the tibial extremity. In such cases, if it cannot be examined by X rays at once, reduce without waiting, and have it examined afterwards. Reduction should be carried out under anaesthesia.

In some of the milder cases the limb can be put up in a plaster of Paris case at once, but in these there should always be plenty of cotton-wool padding round the ankle in case there should be swelling after it is put on. In others, it is best to wait to allow subsidence of the swelling, and then to put up in plaster of Paris. In the interval, the limb should be put up in some other fixation apparatus, such as back and side splints or pillow. But plaster of Paris is the best fixation apparatus, or material.

#### The Treatment of Relatively Easy Cases.

When there is no great tendency to displacement, I think back and side splints are reasonably efficient, adaptable, and comfortable. A piece of adhesive plaster should be attached to the sole, and the plaster held up by a cord passing over a pulley

at the top of the foot-piece and tied to a hook, nail, or ring fastened to the distal surface of the foot-piece. By this contrivance the foot can be held up so that the heel needs no pad beneath it. A properly shaped pad of cotton-wool is placed on the back splint so that it is built up towards the lower part of the leg, and also built up under the popliteal space. By this means accommodation is made for the thickness of the calf. A thick pad of cotton-wool is placed low down on the medial side of the leg to press against the tibia, and another is placed against the side of the foot below and behind the lateral malleolus. These are intended to act as soft pressure pads after the side splints are placed. I have devised a convenient many-tailed bandage to replace the old type roller bandage, and this is adjusted and pinned over the leg and the dorsum of the foot. Then additional pressure pads are applied over the others and the padded side splints are applied. The side splints are fastened by three strips of bandage or webbing passed under the back splint and round the outside of the side splints and then tied or buckled across the front of the leg. The side splints should be twelve and a half centimetre (five inch) boards, not ten centimetre (four inch). The reason for using twelve and a half centimetre (five inch) side splints is because a ten centimetre (four inch) board often allows the bandage strips, when tied, to press on the front of the leg, interfering with the nutrition of the underlying skin. I have often seen pressure blisters thus produced. The heel must not rest on the back splint, and the malleoli must not be pressed on by the side splints. There must be no concentration of pressure over any part, and especially so where the bone is subcutaneous, for it interferes with the blood supply and nutrition of the skin. Here again I have seen pressure blisters produced by lack of care in this respect. It should never be forgotten that when a limb is in splints it cannot move, and a spot of pressure lasts for hours and days, not minutes. What may be trivial for a short period of exposure can easily be serious when prolonged indefinitely.

As an alternative to back and side splints I have sometimes used a pillow firmly pressed over the leg, ankle and foot. The whole is then raised on a cushion, and the pillow is steadied by sandbags. A pillow, thus used, is often very comfortable and satisfactory when a simple support is all that is required.

But there is to be no toleration of inefficient treatment. Back splints and pillows are not applied merely to look at and produce a semblance of treatment. If they cannot or do not answer to the proper requirements of the case, something else must do it.

#### Massage and Passive Movement.

I do not employ massage and passive movement early. I am not blind to the advantages of improving the vigour of the circulation (though, after all, a massage period is only a very small and relatively insignificant fraction of a 24-hour day), but the

risks far outweigh the possible advantages. It is absolutely necessary to maintain good position. Good anatomical position is so important that no risk should be taken.

As for passive movement, the same applies. It is certainly very desirable to prevent the formation of adhesions in the joint, but that risk must be taken in the case of a malleolar fracture, and in my experience joint adhesions do not form a serious element in the after result. We must get close approximation and firm union of the torn ligaments, and nothing must be allowed to jeopardize the proper union of these important structures. The conditions are altogether different from those following operation on a meniscus in the knee joint, where movement is necessary from the first few days onward.

#### *Later Treatment.*

In the great majority of cases I keep the foot in plaster until about seven weeks from the date of the accident. When the plaster is removed, the patient is told to move and manipulate his foot, and he usually has massage for a time. He is told not to put his weight on it at first, but in about a week's time he is told to walk a little in the house, and in another week to walk freely. This is about nine weeks from the date of the accident. When there has been extensive rupture of ligaments, or when the patient is very heavy, the date of walking is postponed for another two or three weeks. I do not think it is necessary in ordinary cases to use restrictive apparatus or to build up the tread on the inner side of the boot, but if there were any outward deformity this would be desirable. It is, however, better not to have this deformity. I do not say it can always be avoided completely, no matter what the nature and extent of the injury, but the resources of prevention are much greater than some seem to think.

It would seem, judging by the reiterated emphasis put on it, that the success or failure of treatment were believed by some to depend on massage, early and late. It is not so. Beyond all comparison, the most urgent and important part of the treatment (except in compound fractures), is the restoration and maintenance of good anatomical position. A very grave responsibility rests on the surgeon. In a difficult case, the outcome depends chiefly on the efficiency of the treatment received during the first week. If the treatment then given is feeble, inadequate, unskilful, ill-judged, or otherwise unsuitable, the after history of the patient is likely to be one of greatly prolonged suffering and disability, as compared with that of one in whose case good anatomical position has been secured by more efficient methods. When there is good anatomical position, it matters little to the limb whether the patient gets massage or whether he does not. He will be able to walk soon. After a certain point, the greatest factor in hastening recovery is the natural use of the limb. The exercise, moreover, goes on for hours out of the twenty-four, not

minutes, as in massage and passive movement periods.

#### *The Treatment of Difficult Cases.*

While the lesser grades of injury do not offer serious difficulties, and give fair to good results even when not very well handled, the case is different in the severer grades. Permanent deformity is too often a result, associated with more or less serious crippling of the patient both by pain and by mechanical impediment.

Let me now devote special attention to these more difficult cases, namely, those included in Class II with a considerable amount of displacement, and those I have classified as Class III and Class IV, though minor members of the last class are not difficult.

I believe my view of the conditions, founded on clinical observation, X-ray appearances, and dissections of experimental fractures, supplies an approximately correct picture, and on this it is possible to construct a scientific, as opposed to a merely empirical method of treatment.

I do not claim that I obtain consistently ideal results in these very difficult cases. I am often dissatisfied. But I can claim that I get results vastly better than I could get ten years ago. It is not that I use more care. I have always been careful. But in those days I followed authority and precedent. Not until I had broken away and become independent did I begin to get these better results.

In my experience, and with my methods, the correction of abduction and eversion deformity is in most cases comparatively easy. The most difficult to control is backward displacement of the foot. Backward displacement may often be reduced rather easily, but it is very liable to recur under the influence of the weight of the foot and the pull of the Achilles tendon. Great care is necessary in this regard, for I have seen skiagrams of limbs put up in plaster of Paris that still showed serious unreduced backward displacement of the foot. The difficulty of control is sometimes very great indeed when there is a large, displaced posterior split of the tibia. In some of these it seems impossible to get really good reduction.

#### *Treatment by Traction and Over Correction.*

The treatment I have used and gradually systematized, is based on traction applied according to certain principles.

We have seen that the lateral ligament of the ankle is not ruptured in abduction fractures. This is a very important fact. If we grasp the foot, pull it down, and adduct it, we pull on the ligament, and through this we pull on the fibular malleolus to which it is attached. Surprisingly little attention has been paid to the mechanical value of this circumstance. For all that, it contains within itself the solution of one of the worst difficulties of treatment (see Figures X, XI, XII).

Figure XIII shows a fracture in which the deltoid ligament has torn in place of a fracture of the



medial malleolus, and there has been partial rupture of tibio-fibular ligaments. It is perhaps nearer to Class II than to Class III.

With a suitable instrument, I apply traction to the tuberosity of the calcaneus, and I apply it so as to pull chiefly on the fibular aspect. The line of traction is applied at the side, and practically in the line of the fibula. This has certain effects. It draws down the heel and counteracts the pull of the Achilles tendon. It counteracts also the pull of the peroneal group of muscles. It helps to dorsiflex the foot. It causes an over correction of the deformity, substituting a slight medial flexion with inversion for an extreme lateral flexion with eversion. It pulls on the calcaneo-fibular ligaments, and this action pulls the fibular malleolus into line with the shaft of the fibula. If the interosseous tibio-fibular ligament has been torn, and the fibula widely separated from the tibia, the traction pulls the fibula down and in towards the tibia so as to rest again in close contact with that bone, permitting the torn portions of the interosseous ligaments to come together. The overcorrection into a position of medial flexion (adduction) brings the tip of the separated medial malleolus nearer to the place from which it was pulled off, facilitating union.

Furthermore, the line of traction is made to pull a little forward rather than in the exact line of the leg. This tends still further to counteract the *tendo Achillis*, and it counteracts the influence of gravity, supporting the weight of the foot. By the increased dorsiflexion produced, it approximates the ends of the anterior ligament and the anterior malleolar ligamentous bands, should they be torn.

I do not really depend on this, however, for overcoming gravity. I do this by attaching adhesive plaster to the sole of the foot and suspending it from above. Again, to cause some backward traction, the sling beneath the leg is not allowed to come far down the splint. This causes some of the weight of the leg to hang from the suspended foot. I use a special splint of my own design developed originally from a Hodgen, but an ordinary Hodgen can be used, though it is not quite so convenient.

Now, remember that when the posterior portion of the tibia is split off and the foot displaced backwards, the interosseous ligament remains for the most part in connexion with the broken off part of the tibia, and the posterior and distal ligaments are intact. If, therefore, the foot is dragged forwards again, and the broken part of the malleolus is dragged forwards and distally by its ligamentous connexions with the *calcaneus*, it comes about that through the interosseous and the posterior and distal ligaments the loose piece of the tibia is dragged forwards in the train of traction and placed in closer apposition to the tibia, especially the part to which the posterior and distal tibio-fibular ligaments are adhering (see Figure XVIII). Only a partial success, however, can usually be expected, and sometimes it leaves a good deal to be desired. The tip of the fragment has nothing to draw it forward, and

it lags. In the skiagram it will still be seen tilting away from the tibia, although the thicker part near the ankle joint may be closer. This tilting I have not always been able to control, and it prevents anatomically perfect reposition.

When these several effects are all added to one another, the sum of it is that we have achieved, in large measure, the conquest of abduction, of diastasis, and of posterior displacement. One of the unfortunate results of an incompletely corrected backward displacement of the foot is an inability to dorsiflex, caused by the *talus* bumping up against the anterior margin of the tibia. But with this technique, the foot is maintained in dorsiflexion throughout the treatment.

I can say further, that the restoration of comfortable walking function is not only made surer, but brought much nearer. I venture to say that under traditional methods, a period of great discomfort, lasting a year or more, coupled with a marked permanent deformity, is so frequent as to be almost the usual thing to expect in these bad cases. I make no claim that I get miraculously perfect results, but on the whole, I get relatively good results, and I expect to get them. Some of my patients with really bad fractures have been able to return to work in less than four months (see Figures XVIII, XIX). I had this encouraging experience in one of my earliest cases.

#### Apparatus and Technique.

I have striven to adapt traction methods to these and other injuries for many years, and I have, in turn, tried patiently and carefully almost every conceivable device. It will be well to mention some of them, and to mention the reasons for abandoning them. I tried many times to effect traction on the leg by applying a plaster of Paris case to the lower part of the leg, so that by traction on the plaster case it might press on the malleoli and pull the tibia and fibula down. Of course this is not suitable for traction on the foot, and so is really outside the strict radius of discussion, but it has been recommended in books and articles in surgical periodicals as suitable for traction on the limb. My experience has been unvaryingly such as to condemn it utterly. If the plaster is not very close fitting, it descends over the malleoli and exerts pressure on the prominence of the heel, and sometimes on the front of the foot, causing serious interference with nutrition, and if not at once removed, it will cause blistering, necrosis, and ulceration, especially on the heel. If it is made close fitting, it comes down on the malleoli, pulling the skin down over them, and causing similar pressure there, with similar results.

Another method is to attach some form of hitch to the foot, and exert traction by this means. I know enough to know that it is a barbarously cruel proceeding, if carried to the length of producing really effective traction. Here again we produce serious effects on the skin.



Fortunately, the pressure of these various appliances usually causes a great deal of discomfort, and leads the watchful attendant to take them off soon. I have always had to do so. But I have had the opportunity on various occasions of seeing the results of such methods from elsewhere, and have seen the ulcers they can produce. Not very long ago I saw such a case in which bandages hitched around the ankle and over the heel had produced very serious pressure ulcers.

Let me say in parenthesis that these disadvantages are also incident to the use of Dupuytren's splint and Syme's horseshoe splint. It may be argued that the disadvantages are not inevitable, but are due to carelessness or ignorance. However, the medical attendant certainly sets out to reduce deformity, and he may find that nothing but tight bandaging will produce a satisfactory appearance of reduction. He is only an ordinary person, and conscientious and careful as he may be, he cannot be expected to have great skill or surgical sense when he has never had the opportunity of acquiring great experience. These two splints should not be recommended for general use. And writers admit that Dupuytren's splint is useless for correction of posterior displacement.

#### Sinclair's "Skate."

Amongst other contrivances, I gave a careful trial to Sinclair's "skate" applied with strict adherence to details. This device consists of a board applied along the sole of the foot, from the sides of which a series of strips of adhesive material pass to the two sides of the foot. To produce traction, a cord passes from the board over a pulley at the foot of the bed, and a weight is suspended at the end of the cord. It was very inefficient, very troublesome, and very disappointing in the results obtained. If Sinclair's glue is used, it does not adhere well, at least not the glue which is dispensed. I am aware that a very special quality of glue is intended to be used, but in actual practice it appears to be very difficult to get. I have tried other adhesive materials, but without much satisfaction. But having obtained something that will stick and stay stuck, I found new troubles, though I used only a small weight. When the traction is applied, the skin is drawn upon and stretches over the dorsum of the foot. It begins to exhibit obvious signs of impaired nutrition. It becomes white and shiny, and the patient complains of pain and discomfort from the stretching. Where the stretching extends under the adhesive material I have seen the disturbance of nutrition so bad as to cause bullæ to form. Then the appliance has to be removed. I got one shockingly bad result in a female patient where this occurred. The deformity could not be controlled, and she got union in very bad position with a permanently abducted foot. My criticism of Sinclair's device is that it cannot be depended on. Often it fails to stay on at all, or if it sticks it may soon cause nutritional trouble and pain. If an attempt is made to pull the foot into adduction, the result

is that the whole of the tractive force is concentrated on to the lateral line of adhesion, greatly increasing the tractive force per square inch of skin on that side, and proportionately stretching and hurting the skin. This makes it necessary to reduce the weight greatly, and in practice it is reduced to futility. This criticism derives its validity from practical experimental knowledge. I am not careless, unmechanical, and impatient. I believe I have given the device a fair trial.

#### Skeletal Traction.

I may say that the bad result I have just mentioned made me thoroughly dissatisfied. I had been accustomed to think of pins, callipers *et cetera*, as severities hardly justifiable because (as I thought) they must necessarily involve a great deal of pain and discomfort. But then I began to ask myself what pain and discomfort could be worse than that experienced by patients under the usual methods. And the usual methods gave what I considered to be very poor results, results, moreover, often loaded with many months of suffering and disability. Once more, could any other methods be worse? So I put aside my prejudices and resolved to try along new lines. And being at the same time very dissatisfied with the current treatment (Thomas-Robert Jones) of fractured femur, I experimented along new lines with the femur too. That, however, belongs to another story.

I resolved, therefore, to see what I could do with a Codevilla's or Steinmann's pin in the next bad case. So next time I hammered a steel pin—practically a long nail—transversely through the *tuber calcanei*, and used traction applied to the protruding arms. I got an agreeable surprise. The patient was quite comfortable, not conscious of the presence of the pin, and the position of the foot was easily commanded. I did several in this way, and found in every case that the patient was entirely comfortable, a thing new to my experience in these fractures, and of course quite contrary to my expectation. But best of all was the comparative ease with which difficulties of control were overcome, and the correspondingly good final result. The final result is the supreme test.

#### The Gimlet Tractor.

But driving pins through the calcaneus with a hammer, although effectual, is crude and clumsy-looking technique, and I set myself to devise an improvement. This I soon evolved. I looked through the shops for the slenderest gimlet I could find that would be long enough, and strong enough to take the traction. I found a suitable article, a gimlet of toy size costing sixpence. Then I bent a piece of strong iron wire to form a tractor, taking measurements from my own heel. I bent loops on the wire so as to be able to make the line of pull either in the middle or on one side. With a cork and a piece of tape the apparatus was complete. The gimlet was pushed transversely—as an awl is pushed, not with gimlet-wise rotation—through the

calcaneus; the tractor was then hooked over it, and one side of the tractor bound with tape or a rubber band to the handle while the cork was fitted over the point. By this means the gimlet was effectually prevented from coming out. The cord was attached to the loop on the fibular side of the tractor so as to pull in the line of the fibula, causing a slight adduction and thus over-correcting the original abduction (see Figures XXI, XXII).

With this apparatus I obtained excellent results (see Figures X, XI, XII). I took care, however, never to leave the gimlet in longer than two weeks. The limb was always put in plaster of Paris while the apparatus producing extension and over-correction was still in place, so as to hold the foot in the same position. Next day the gimlet was withdrawn, and the wound quickly healed. The hospital records show that there were over 150 cases treated in this way, not all malleolar fractures, some being fractures of the shaft. Many fractures of the shaft of the tibia are suitably treated by traction.

#### *The Spring Tractor.*

However, I went on experimenting, because I was not satisfied with a method which involved the making of a hole through the calcaneus. I had always abstained from treating fractured femurs by pins through the condyles because I had in mind the possibility, if the tract became infected, of getting a tunnel through the bone which would not heal. I had no such case in the *calcaneus*, but I believe that was because I was always careful not to leave the instrument in long. If the method became popularized, it would certainly be used by some men who had not enough surgical sense to appreciate the danger of leaving the gimlet in too long, and there would, as a result, be patients who would get permanent fistulas. The method had this element of danger, and though no method can be foolproof, one should reduce risks as far as possible.

I had found great satisfaction with the Schmerz spring tractor on the condyles in fracture of the femur. So I designed an instrument based on Schmerz's, but incorporating additional features, so as to adapt it to my principle of pulling in the line of the fibula to produce over-correction when desired. This is what I now recommend. It does not do the work better than the gimlet, but it has the advantage that it involves no perforation of the bone and it is therefore more suitable for general use. Gimlet traction, however, is easily improvised for emergency use.

This instrument is made of Number 5 Imperial standard wire gauge spring steel, of the shape and size shown (see Figure XXIII). If made too short it is not easy to take out. It is essential that the points should be rather close together. The instrument is sprung on to the tuberosity of the *calcaneus* well back, and in applying it care should be taken to see that the points rest at or above the widest part of the bone, where it begins to become convex above (see Figure XXIII). They should not

take their grip low down on the sides as they begin to come in to form the under part. The seat on which they are to rest should therefore be carefully chosen beforehand. If the points grip too low down, they may slant down more or less in the direction of the surface, instead of being nearly at right angles to the cortex of the bone. If they approach the bone tangentially they may not take a secure hold, and may slide down later on, causing the soft parts to be dragged on, and producing an open ulcer and much pain.

#### *How to Apply the Tractor.*

A short description of the actual method of application may now be given.

Splint and suspension apparatus are got ready, and the patient is anaesthetized. The skin is prepared, the region of the heel examined, and the place to apply the points of the tractor is decided on. The puncture has to be well above the bony points that are to be gripped, but not so as to pull any skin down. On no account must any incision be made. This is very important. The surgeon then grasps the tractor and pulls downward, laterally and forward as may be necessary, and pulls as hard as he likes. So secure is the grip that he could very nearly pull the patient out of bed if he wished (see Figure XXIV). Having obtained reduction, one of my special splints (or if that is not available, a Hodgen) is adjusted. A 2.25 kilogram (five pound) weight is attached by a cord and snap-hook to the fibular side of the tractor, and the line of traction is made to pull a little upwards from the line of the leg. The foot is suspended by a piece of adhesive plaster to the foot arch of the splint or is suspended by a 0.9 kilogram (two pound) counterweight to the overhead frame which I always use. I have found that house surgeons have sometimes put 6.75 kilogram (fifteen pound) extension on the heel, but this is unnecessary, and as it pulls chiefly on one ligament, the lateral, it would be equal to a much greater weight pulling evenly on both sides. The placing of the pull on the lateral loop of the tractor keeps the foot in a slightly over-corrected position, that is, in medial flexion with a little inversion. The limb is, of course, well elevated. If an overhead frame is not available, a bed-cradle can be used, the splint being suspended from it (see Figures XXV, XXVI).

#### *A High Standard of Comfort and Efficiency.*

It is a very remarkable fact that the tractor, although it has perforated the skin, never reminds the patient of its presence. It is productive of the greatest comfort. The skin fits snugly round the tines and blocks the entrance of infection. There is no red areola round the punctures and no tendency to suppurate. I have had very extensive experience with fractures in this region, and I can say without any hesitation that as regards comfort there is nothing else that even begins to compare with this method, repulsive-looking as it seems to

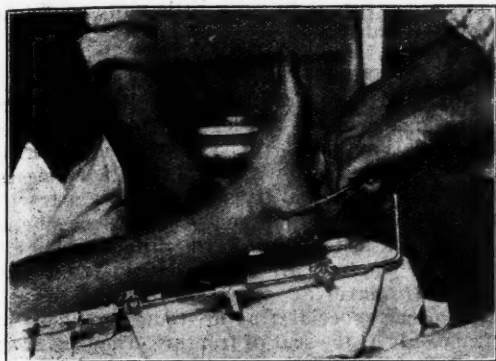


FIGURE XXIV.

Reducing a fracture (under anaesthesia). In this case it was not at the ankle, but higher up in the leg. An initial mistake was made by inserting the tractor at too high a point, thereby causing a pull on the soft parts. It was taken off and reapplied. Note the mark where first applied. It shows how not to do it as well as how to do it.

the inexperienced. Of course when I speak of comfort I mean only when it is properly applied. Dragging on the soft parts causes pain and must never be allowed.

I can further say that besides being by all odds the most comfortable method of treatment, it stands in a class by itself for efficiency. It gives a command over position utterly beyond everything else ever devised, and it is theoretically correct in its mechanical points for all bad fractures of the abduction type. Adduction fractures call for different measures, but they are relatively easy to treat. However, if traction is ever required in an adduction fracture, it can be done in the same way, but then the pull should not be in the line of the fibula, but one of the other loops should be employed.

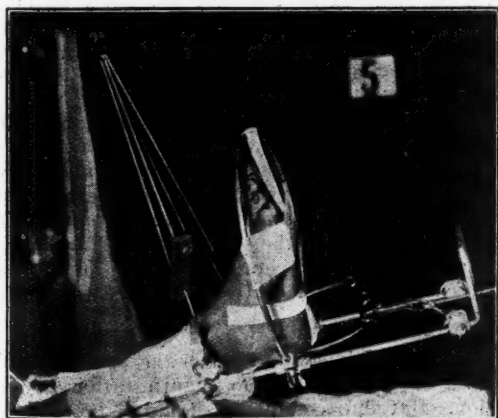


FIGURE XXV.

Treatment of Malleolar and Supra-malleolar fracture. Shows the foot arch on splint and the method of suspending and controlling foot. Tractor on heel with traction in line of fibula.

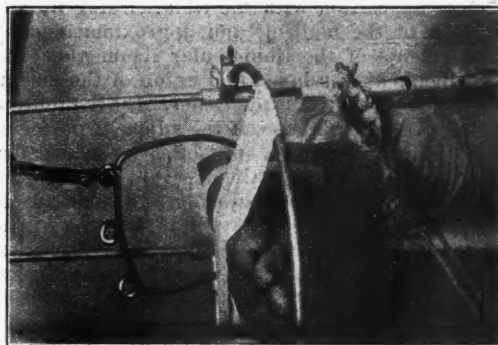


FIGURE XVI.

Treatment of Malleolar and Supra-malleolar fracture. Overhead view of tractor on foot showing use of the loops and how traction in fibular line holds foot in adduction when required.

It is my custom to keep the foot in extension in this way for from one to two weeks. Then a plaster of Paris case is applied with the tractor still in position, and the foot still in over-correction. Next day, when the plaster is dry, the tractor is removed. I prefer that this should be done under ethyl chloride anaesthesia. While the punctures heal usually in a few days, I have seen two cases in which healing was long delayed, but one of these was in a man who got *delirium tremens* while the tractor was on. Nevertheless, he got an excellent result, though he had suffered a very bad fracture.

I have already outlined the theory on which the technique just described is founded. But let us see once again what we have contrived. Using the basic anatomical fact that the lateral ligament is intact, by putting on traction in the direction described the lateral malleolus is pulled downwards, medially, and a little forwards, straightening out the fibula into line. The malleolus is made to come

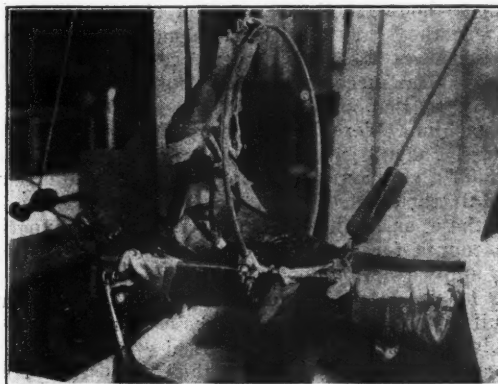


FIGURE XXVIII.

McG. Grave compound supra-malleolar fracture, admitted a day after injury with complete protrusion of proximal fragment. Successfully treated, without suppurative or rise of temperature by tractor on calcaneus and traction in line of fibula and with Carrel-Dakin technique. Note the apparatus and the convenience and efficiency attained. Question: What would have been the anatomical and general surgical result in a hospital which knows not skeletal traction?



into close apposition with the tibia, closing up any separation of the malleoli and approximating any torn fragments of the tibio-fibular ligaments. The deltoid ligament is relaxed and union of the medial malleolus to its seat is made easier. By the pulling forwards of the fibula also, if the adjacent posterior part of the tibia has been split off, it is drawn forwards with the lateral malleolus through the connecting ligaments, thus restoring the bone to its seat at the level of the joint, even if the apex of the fragment is still tilted backwards. The pulling forwards of the foot and setting it in dorsiflexion approximate the torn fragments of the anterior ligament. The suspension and over-correction also counteract the influence of gravity and the action of muscles which would reproduce the deformity if uncontrolled.

#### Compound Fractures.

As to Class V, compound fractures, when conservative treatment is possible, the advantages offered by a tractor on the *calcaneus* such as I have described are so obvious as to need no discussion. When one has had experience with it, one wonders how it could possibly be done without. This applies with equal force to compound supramalleolar fractures, and sometimes to similar fractures higher up. It facilitates greatly the employment of the invaluable Carrel-Dakin irrigation technique (see Figures XXVII and XXVIII).

#### Supramalleolar Fractures.

This introduces us to the subject of supramalleolar fractures. The typical Malgaigne type is not infrequent. In this, the tibia and fibula are broken above the malleoli, the tibia is comminuted, and the fracture extends into the ankle joint. It should not be thought that supramalleolar fractures are rare. Unfortunately they are not. The results of ordinary treatment of badly displaced supramalleolar fracture in wooden splints or plaster of Paris without traction are often shockingly bad. These methods are totally inadequate, and the patient emerges from his experience as a life-long cripple. The surgeon who does not apply traction directly to the bones meets here a problem that defeats him. Were I a patient with one of these injuries, I should be extremely sorry to fall into the hands of a surgeon who is not willing to use direct skeletal traction.

In these, as in the other fractures, if my experience counts for anything, the proper thing to do is to apply traction to the *calcaneus* in one of the ways I have described, and to control the direction of pull as the circumstances of the case may require. Absolute perfection is not obtained every time, but the general efficiency of the method is most impressive (see Figures XXIX, XXX, XXXI, XXXII). In these injuries I think it is wiser not to hurry the limb into plaster of Paris, even though X-ray examination may have revealed that reduction is practically perfect. I would break the general rule of not allowing the tractor to remain on more than two weeks when the fracture has been badly

comminuted. This is to get a little more consolidation by soft callus.

#### Fractures Higher in the Leg.

Let me add here that there are many cases of fracture higher up in the leg with over-riding, or with angulation, that can be controlled better by skeletal traction than by any other ordinary means. I have sometimes found it useful to apply a tractor to the heel while the patient is under anaesthesia, and have an assistant pull hard while the bones at the seat of fracture are manipulated (see Figure XXIX). I have at times coupled with this the use of my special fracture-reducing hooks on the fragments at the seat of fracture. They are stuck through the skin without making an incision. A plaster of Paris splint is applied as soon as it is apparent that good reduction has been obtained. Sometimes, when it seems safe, the tractor may be removed before the anaesthetic is stopped, but it is usually best to maintain some moderate traction for a few days, or at least until an X-ray examination shows that a sufficiently good result has been attained, and is likely to remain.

I may add one other remark applicable both to supramalleolar and to higher fractures. In these cases the ligaments of the ankle are intact, and when one is pulling straight downwards, one is pulling through both malleolar ligaments. Provided the pull is not on one side, one need not hesitate to put on a traction of from nine to thirteen and a half kilograms (twenty to thirty pounds) should it seem desirable, but heavy traction will rarely be called for.

#### Operative Treatment.

I have very little to say about operations. I have on a few very rare occasions performed tenotomy of the Achilles tendon, but I dislike it. In cases where it may be desirable to put the tendon out of action for a longer time than usual, I think it will be found a less serious proceeding if a second tractor be used after the first has been in long enough, and inserted in a new place. I did this once in a case of fractured *calcaneus*, using successively a gimlet and a spring tractor, with a very satisfactory result.

As for putting a screw through the malleoli. Would you allow anyone to do it to you? Or would you prefer to have skeletal traction which does everything that the screw can do and a great deal more that the screw cannot do, but without open operation and without the screw? When that question is answered, your course is clear. Treat your patients as you would be treated.

#### SOME PSYCHOLOGICAL CONSIDERATIONS.

I have some advice as regards the psychological aspect. There must be no manifestation of indecision. But your confidence should be founded on good reason, and you must be really sure. You must acquire your patient's confidence, but you must deserve it. You must not let your patient down. If he trusts you, he will have no fear, and

picture of  
type, showing

Oblique Fra-  
duction Ty-



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FIGURE V.  
Fracture of Medial Malleolus. Adduction  
Type. Showing Characteristic Oblique Line  
of Fracture.



FIGURE VI.  
Typical Adduction Fracture, Bi-Malleolar.  
Oblique of Medial Malleolus and Transverse  
of Lateral.



FIGURE VII.  
Exceptionally Severe Adduction Fracture.  
Lateral malleolus fractured transversely;  
medial malleolus and a large flake of tibia  
split off nearly vertically. Extreme medial  
displacement of foot. In this position it  
has been put up in plaster, ensuring  
permanent disablement. Such a case  
presents no difficulties with skeletal traction.  
The medial and lateral ligaments are intact  
and if proper traction is made on the  
calcaneus, these ligaments will pull the  
fragments into line.



FIGURE VIII.  
Oblique Fracture of Lateral Malleolus,  
Adduction Type. An os trigonum is present.



FIGURE IX.  
Bi-Malleolar Abduction Type Fracture.  
Transverse of Medial Malleolus, and  
Oblique of Fibula, with a Posterior Marginal  
of Tibia. Displacement slight. No evidence  
of rupture of ligaments. Can expect good  
result with almost any sort of treatment.



FIGURE X.  
A.B. Number 1. Abduction Fracture of  
Classical Pott's Type. Fibula Comminuted.  
Extreme Lateral Displacement of Foot.

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FIGURE XI.  
A.B. Number II. Same Case as Figure X.  
Under Treatment by Gimlet Tractor on  
*Calcaneus*. Note the ideally perfect  
reduction by purposive over-correction.



FIGURE XII.  
A.B. Number III. Same Case as Figures  
X and XI. Shows perfect final result.



FIGURE XIII.  
Abduction Type Fracture of Lateral  
Malleolus and Rupture of Deltoid Ligament,  
with Extreme Lateral Displacement of Foot.  
Other ligaments necessarily torn are the  
anterior capsular and the distal tibio-  
fibular. Lateral ligaments being intact,  
skeletal traction on *calcaneus* in fibular line  
will reduce and hold in over-correction.



FIGURE XIV.  
Abduction Fracture of Both Malleoli.  
Rupture of tibio-fibular ligaments. Diastasis.  
Lateral displacement of foot.



FIGURE XVI.  
Mrs. E.M. Fracture of Both Malleoli.  
Large Split Fracture Including Posterior  
Margin of Tibia. Comminution. *Talus*  
driven upwards and backwards between  
fragments. Great Backward Displacement  
of Foot (with abduction). Posterior  
portion of fibula accompanies posterior  
portion of tibia with their ligamentous  
connexions untorn. The skiagram shows  
a mishandled case, five weeks after injury.



FIGURE XV.  
Abduction Fracture of Both Malleoli.  
Rupture of tibio-fibular ligaments. Diastasis.  
Lateral displacement of Foot with out-  
ward rotation. Deltoid and lateral  
ligaments intact.

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FIGURE XVII.

Miss K.H. Number I. Description practically same as Mrs. E.M., Figure XVI with which it should be compared. A spring tractor was applied to the calcaneus. Anatomically and functionally perfect result obtained and patient was back at work (factory welfare worker) in fifteen weeks.

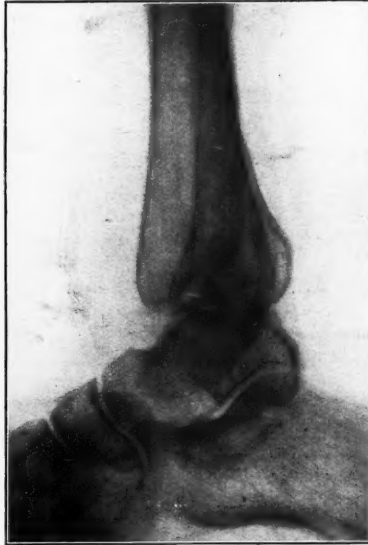


FIGURE XVIII.

Miss K.H. Number II. See Figures XVII and XIX. Lateral view Skiagram taken six Months after the Injury. Shows perfect anatomical result. Functional result was equally perfect.



FIGURE XIX.

Miss K.H. Number III. See Figures XVII and XVIII. Antero-posterior skiagram taken six months after injury. Perfect result.



FIGURE XX.

Posterior Marginal Fracture of Tibia without Fracture of Fibula and without Rupture of Ligaments. No Displacement.

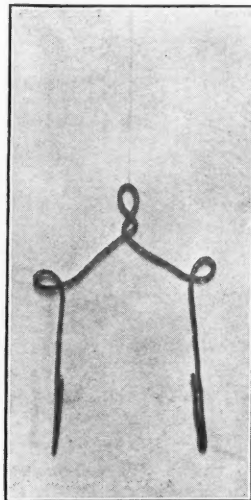


FIGURE XXI.

Improvised wire Hook for gimlet Traction, actually Used. Being easily contrived, this form of treatment is well adapted for emergency work.

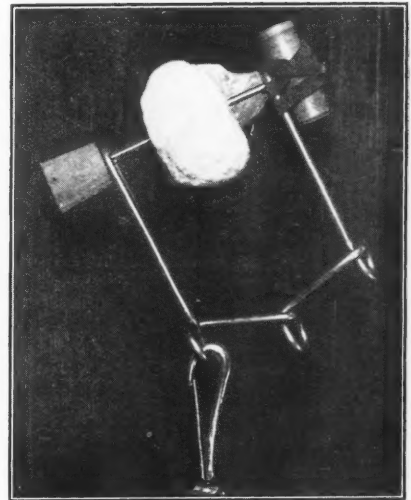


FIGURE XXII.

Gimlet Tractor on Calcaneus. The wire hook passes over shaft of gimlet close to either side of heel and is bound to handle. Gimlet cannot possibly come out when thus bound. A cork is placed on point. Note how tilting for over-correction is obtained.

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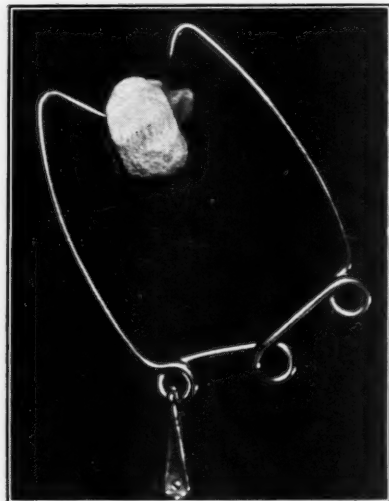


FIGURE XXIII.

Spring Tractor applied to a *Calcaneus* to show best site for Grip. Also illustrates tilt produced by traction on lateral loop. Overall length of tractor 16 centimetres ( $6\frac{1}{2}$  inches), width 11 centimetres ( $4\frac{1}{2}$  inches).



FIGURE XXVII.

G. Compound Comminuted Supra-Malleolar Fracture showing Tractor on *Calcaneus*. A perfect result was obtained. In a case like this, such a result would be practically impossible without skeletal traction, but with the tractor treatment becomes easy, simple and comfortable.



FIGURE XXIX.

L.S. Number I. Compound Supra-Malleolar Fracture Before Reduction. Lateral View. Note the angulation with backward displacement of foot, maintained by the action of gravity and contraction of Achilles tendon. Treated by spring tractor with perfect result. See Figures XXX, XXXI and XXXII.



FIGURE XXX.

L.S. Number II. Same case as Figure XXIX. Antero-posterior View Skiagram before Reduction. Note abduction displacement.



FIGURE XXXI.

L.S. Number III. Same case as Figures XXIX and XXX. Lateral View Skiagram. Shows limb in plaster of Paris after removal of tractor. Note perfect anatomical result.



FIGURE XXXII.

L.S. Number IV. Same case as Figure XXIX, XXX and XXXI. Antero-posterior Skiagram of Limb in Plaster of Paris after Removal of Tractor. Perfect result.



will give himself into your hands to do what you may think right. Do what is necessary without waste of time, and while the patient is in his worst pain. The more pain and discomfort he is suffering from at the time, the more will he wish to be made comfortable. Overdosing with morphine before reduction may be psychologically unwise. On the other hand, for some temperaments, where fear is an overprominent emotion, a sufficient dose of morphine *plus* a sufficient dose of hyoscine may be quite the best thing to prepare a patient.

If you believe it is a bad and difficult fracture, tell him and tell his friends so frankly, and tell him that nothing but the best treatment will do. Tell him that you can fix him up so that his present pain will be immensely and immediately relieved. You are safe in promising this. But never promise a perfect result. Promise the best possible under the circumstances. Do not shock him or his friends, who are ignorant, as you were once, by a detailed description of the proposed procedure. I think it is cruel and unfair to the patient to say crudely that you are going to "stick hooks into his flesh." He will inevitably get a false idea about it. Operations are not presented to patients' minds from that point of view. If the patient wants to know, you are going to apply a tractor, something with a technical surgical name, and it is described as a beneficent and pain-allaying way of controlling the position of the bones and the muscular starts, and which will probably reduce the period of disability by many weeks or months. It may prevent a later operation. Every word of this is true.

Give a hypodermic injection of fifteen milligrammes (quarter of a grain) of morphine before he recovers from the anæsthetic, unless he has had one immediately before. When the splint, tractor, and so on have been applied, cover the foot, ankle, and leg, and the tractor with sheeting, flannelette, or other material cut to shape and well pinned up. The patient will not know by his sensations that any instrument has perforated his skin, but he will know that you have fulfilled your promise and that he is now comfortable. It is quite likely that he will not realize for some days that the instrument is really down to the bone, and by that time he will have acquired a considerably increased respect for the wonders of surgery, and will not be amenable to the mental suggestion of pain attributed to the punctures. He will have already confessed that he is comfortable, and realized that you can perform as well as promise. The friends may be inquisitive, but they must not touch, and their mental attitude must be managed similarly. They must not suggest pain to the patient, but suggest comfort, and so must all those in attendance. But the patient should be told that if he is uncomfortable it is very important that he should complain, and should go on complaining until he has been made comfortable. I make this a standing rule for every kind of fracture case in hospital. I tell the patient that he must complain if he is in pain, because pain is unnecessary, and the nursing and resident staff can

and must see that he is comfortable. I believe the mere fact that he is told that pain is unnecessary and can always be relieved produces a good mental effect. There are a few temperaments that take a morbid advantage of this instruction to complain if uncomfortable, but they are soon recognized. As a matter of fact, the patients know when they are well off, and they are surprised at being so comfortable. I can remember the time when things were very different. The fracture ward in the old days was a torture chamber, and the abode of groans. Now we have worked a revolution. We get very little trouble indeed.

#### ON SOME RECENT BOOKS ABOUT LISTER: A CENTENARY CONTRIBUTION.

By R. SCOT SKIRVING,  
*Sydney.*

It is well that we should commemorate great men and no better instance could we of medicine find whereon to express our gratitude and pride than in the remembrance of the life and labours of Joseph Lister.

Just now, one hundred years after his birth, many celebrations of the event have taken place in all parts of the civilized world and many books have been published containing fresh records of his life, as well as intimate recollections of his unique personality, his gracious character and also of the conditions in which he brought to practical use his epoch-making discovery; of these books, three lie before me.

"Reminiscences of Lister" by one of his first House Surgeons in Glasgow, Sir Hector Cameron; "Lister as I Knew Him" by Dr. T. R. Leeson, a dresser and clerk in the Edinburgh days; and lastly, an account of "Lister and the Lister Ward in the Royal Infirmary, Glasgow," by several authors. This is largely a pathetic record of the unavailing efforts to prevent the demolition of the ward in which Lord Lister worked; it makes painful reading.

These books are all admirable in diverse ways, but all three are alike in their spirit of admiration for one of the greatest and most useful of men.

Two of these books possess the special value to posterity that they convey first hand knowledge of the man himself. Those who come after us can have no cause to complain that the personality of Lister is shadowy and vague.

In Dr. Leeson's book we have a fine tribute by a devoted pupil to his master. He paints indeed a delightful picture of a great and lovable man, one whose high ideals and mild persistency to accomplish truth, whose patience with opposition from those whose obstinacy or indifference made them unable to see the light which had arisen in their midst, are all clearly set forth at first hand by this faithful disciple and his narrative carries conviction. I myself, who unhappily had only a slight personal knowledge of Lister, find indeed confirmation of all my own impressions of him, although my experience

of his personality came several years later than the period described by Dr. Leeson.

One must, I think, admit that Lister was a man who seemed always to stand too far apart and above his earth-born fellows to be loved and consulted and companioned with, in quite the same way which attracted all men to the delightful personality of William Osler. You could not joke with Joseph Lister.

Indeed Cameron, Watson Cheyne and Leeson, all agree that they never could quite overcome a kind of awe they felt for him nor be wholly at ease in his presence. Leeson says he never saw Lister laugh. The saving grace of humour was apparently lacking.

He was obsessed and set apart by his absorption in his mission. Nor did he have hobbies or sports; but he was cultured, with a fair knowledge of classical learning and he spoke two modern languages as well.

I certainly think that he took life and himself a little too seriously. Surely he might have come down occasionally from "those stern peaks that dared the stars" and laughed with his less inspired brethren.

I wonder with his staid, serious ways, if he ever realized that he was saying anything which could appeal to the frivolous-minded when he began a lecture in these words:

"Gentlemen! Cat-gut is not cat's-gut but sheep's-gut!" Or again, talking of bodily health being required when about to operate, he remarked: "You should not attempt the passage of bougies through a difficult stricture unless your own bowels have been properly moved in the morning!"

But notwithstanding this lack of humour and the faint air of sadness which clung about his comely presence, even as a garment, Lister was always courteous and patient to a wonderful degree. He suffered fools too, perhaps not gladly, but with sweetness and forbearance, if they were earnest "seekers after the sincere milk of the word" and, indeed, was all that Henley's often quoted poem says of him. Moreover, he loved children, though alas he had none of his own.

To rich and poor alike, he was kind, patient and helpful—indeed, as one of his students said: "I believe Lister thinks that every patient has been sent to him with God Almighty's visiting card."

Many of his aphorisms are piously recorded by Dr. Leeson with most of which we, fifty years later, will agree, but not in all cases. For instance he says:

"Never ask a patient if he has had syphilis. If you know your work, there will be no need to do so. Has he not done wrong enough already without tempting him to add to his transgressions by telling a lie?"

But how many such patients with obscure symptoms carry their dyscrasia on their faces? Why should we believe that all patients will in these days be so foolish as to deny infection if you have the common sense not to ask about it in the presence of their wives?

It is interesting to note how those who knew Lister best, seem to speculate about his opinions on religion.

Born of godly Quaker stock he became a member of the Church of England on his marriage with James Syme's daughter. He lived during the days in which Darwin, Huxley and Spencer, to mention only three great Victorians, published their arresting and compelling works, and he must have known their import; but apparently he made no sign. There is very little to show that he ever clearly disclosed his beliefs in dogmatic theology, even to his intimates. But his faith, whatever it may have been, must have been of good and practical use, for his saintly character, his high ideals and his daily life and conversation showed that whatever he may have believed, that he was in deed and thought a follower in all things "upon those blessed fields, where two thousand years ago the Galilean trod." Now and then perhaps the window of his soul was lifted, as when he exhorts the new graduates "to regard their calling as high and holy, for it is your proud privilege to tend the fleshly tabernacle of the immortal spirit."

But he stood apart from the religious life of Edinburgh of the 'sixties and 'seventies and it was well, for even as politics are mostly a polluted pool, so in a less gross degree was the fierce sectarianism of these days in that austere city of the north.

A place indeed, where certain warring sects, "separated in their assemblies by the breadth of the street and divided by hair-breadths of doctrine, prayed for each other in damnable accents" and could see nothing absurd or wrong in such an attitude. But Lister would have none of these things. Nor did the dour Sabbatarianism of Scotland overwhelm him, for he actually committed the sin of visiting his wards on the Sabbath—a reprehensible practice followed in later years by Argyll Robertson, to the considerable scandal of the elect—but, of course, both these men were, no doubt, Episcopalians!

Whatever then, was Lister's faith, it must have been a lucent ladder, for it led him to things most high and holy.

I wonder what he would think in these days if he realized the ecommercialism of our profession, which he held high above rubies and other worldly things.

No doubt he had private means, enough to live upon, and so he had not the acute push to work, nor the responsibility to provide, which is happily the lot of most doctors who are not as he was. I think it a glory to him that his fervid soul rose above the stimulus to idleness which is given by easy circumstances. He never had a big practice, he never was a "hardly driven" consultant. Money, as an end and object of work, had no place in his life. He worked hard, very hard for altruistic reasons, for the sake of discovery, for the relief of suffering, for the prevention of sepsis. "Call no man good till you have read his will," so says his faithful student Leeson. He left a little over £60,000, much of which

probably he inherited from his father, and of that he left £60,000 to public uses.

True, he unhappily had no children and when his devoted wife died, he faced the end of his life in loneliness. In his case, as with Bacon: "Great men have no continuance." We may well speculate, as one writer has done, what we would have expected in the offspring of Lister and a grandchild of James Syme. Perhaps disappointment, for Nature having made a Master, might desist in the next generation from carrying on the radiance of the forebears. Only occasionally are men set apart "and an individual life transfigured and irradiated with glory."

These books are not in any way full biographies of Lord Lister, the history of his nephew Rickman Godlee will, I think, always be the standard book, but they are valuable and supplementary and give an admirable first hand presentment of the evolution of antiseptis and asepsis, not diverse systems, but complementary to each other. Both are really the outcome of Lister's genius.

The discoveries of Pasteur, as we all know, gave Lister the great central idea of septic organisms being the cause of pus formation and septic disease and the steps by which he combated these infections, are set forth in these books and are as worthy of study today, fifty years later, as in those times when his ideas and methods were fighting for acceptance and adoption in practice.

To many great discoverers, alas, the world has turned deaf ears in their own days and they have perhaps had to console themselves, as Bacon did, when he "left his fame to the consideration of foreign nations and the next ages"—or, even as Robert Burns, when he lay dying and turned to his wife and said that "one hundred years from now folk will think a deal mair of me than they do today."

But Lister had a happier fate before his sun set, for he was both the Moses and the Joshua of his theory and practice—he lived to enter the promised land and saw the seed he sowed become the full ripened grain.

Even if for long his own countrymen were inimical and unconvinced at home, he converted foreigners to his views and strangely enough his evangel of hope in surgery came back to London to convince the home-doubters, through the indirect evidence of disciples, many of them not of British birth.

The knowledge that though he had "fought with beasts at Ephesus," to use his own imagery, yet had prevailed, must have mitigated the loneliness of his closing years and illumined the sunset of his life, as he gazed, as he often did, on the changeful waters of the English Channel, when he came to die at Walmer. He knew that his work had prevailed and his life had not been frustrate.

We who realize fully the greatness of his service to humanity, feel no surprise at the passionate praise of those who knew him at first hand and were touched by the alchemy of his noble influence.

We remember with approval the homage of the assembled scientists at Amsterdam and Paris and we endorse the words of one of the best loved

American Ambassadors, who, in proposing Lister's health at the Royal Society said to him:

"Lord Lister, it is not a nation, it is not a profession, it is humanity itself which with uncovered head salutes you."

The Glasgow centenary contribution, mainly written by A. C. Maylard, a well known Glasgow surgeon, and T. A. Morris, a distinguished architect, deals largely, as I said before, with the Lister Ward in the Royal Infirmary. But the authors also discuss the early work done within its walls, for we must remember that it was during the nine years spent as Professor in Glasgow he mostly worked out his campaign against septic disease. Two of the writers of the books I discuss, use almost the same words. They say: "he made three attempts to escape, the last being successful," in that, in 1869, he succeeded his father-in-law in the Chair of Clinical Surgery in Edinburgh.

Nor need we be surprised at the quaint wording. I remember, in the Edinburgh of my day, how many things were done wrongly, things needing "sweetness and light" which was not to be found in the acts of the "baillie-body" kind of persons who sometimes held authority over such matters. I understand that the same kind of people are still even more common in Glasgow and of an added septicity.

After Lister in wards formerly decimated by sepsis (the building itself was partly built over the pit-burial of over five thousand persons who perished of cholera in 1849, with only a thin earth covering of the undecomposed corpses) had by his antiseptic methods reduced the operative mortality to something akin to modern results and he had very properly published the facts, the Managers of the Royal Infirmary resented the view that antiseptic treatment had effected the change and coolly gave the credit to "their care and attention in improving the diet and nursing and the cleansing of the wards," and this in the face of the fact that Lister's wards had not been cleansed for three years. And why? Because his good results had not called for such cleansing which was needed in other wards where his antiseptic practice was not in vogue, and where the death rate rose and continued even higher than the Managers of the time thought normal.

Can we wonder then, when those actually on the spot at the time failed to see that a new light had arisen to lower the shocking hospital mortality which prevailed, to change conditions of pain, risk, long convalescence and death, to comfort, speedy healing and safety, that the Managers or at least a majority at a long later date, but with apparently an unaltered mentality could see no reason to preserve one ward as a glory to their institution, a Mecca to surgical pilgrims and a memento of the great deeds done therein by the most distinguished member ever upon their staff.

But they would not hearken to many calls. To some of these men the ward was "just a ruckle of stanes" and "whae was Lister ony wie?" "Just a doctor whae had sair fashed their predecessors wie



his new-fangled notions and awfie expensive dressings."

And so, in spite of all decent sentiment, lay and professional, in opposition to the dignified protests of great foreign scientific bodies and the request of distinguished men of many nations, creeds and professions, the small majority of the Managers in 1923 and 1924 turned a deaf ear to everything and destroyed the ward. The true Bolshevik spirit of destruction—the delight in power to do evil, with no just, logical, scientific or material excuse. Ignorant, headstrong men, vested with a little passing power, it is a pity that these books do not tell us the names of the perpetrators of this outrage. But the protests are all eminently dignified, without heat, without personality. Perhaps it is better so and more in keeping with the spirit of Lister.

However, let us not now, in Sydney, smile the smirk of conscious rectitude, for here, today, I suppose the same sort of thing might happen, for we have, as various public events have shown, just as many like-minded persons to the square mile, who would, if they could, surpass even these "puir Glesca bodies" in delight in destruction and inability to construct, but no doubt they will all in the end "go to their own place!"

The ground floor of the ward now lies broken and tumbled, just as the workmen left it three years ago and so far nothing has been done with the space so urgently desired by the image-breaking Managers!

Nevertheless be it remembered that:

Ye that cast  
Temples to desolation, and lay waste  
Tombs, the untrodden sanctuaries where lie  
The ancient dead; yourselves so soon to die!

and so we may leave those who did this wrong, perhaps to a tardy repentance and the ever-present knowledge that they put a slur on the fame of Glasgow, which even the protests of her best citizens will hardly wipe out.

But what does it all matter to the name and fame of that quiet one-time Quaker who wrought his healing work within these once septic walls?

He sleeps eternally—not indeed with the nation's great and memorable, not in that "temple of silence and reconciliation," not in the Great Abbey, but rather, as he himself wished, in a more humble resting place by the side of her he had loved so well in life. Yet his glory and his discoveries live after him without the need of material monuments, but perpetually renewed in the daily knowledge and work of uncounted surgeons and in the saved and happier lives of millions of people.

When the ear heard him, then it blessed him, and when his eye saw, it gave witness of him; he delivered the poor that cried, the fatherless, and him that had none to help him. Kindness and meekness were on his tongue. If there was any virtue, and if there was any praise, he thought on these things. His body is buried in peace, but his name liveth for evermore.

"The Trojan Women," Professor Gilbert Murray's translation.

## Reports of Cases.

### RETROBULBAR NEURITIS OF NASAL ORIGIN.

By J. A. O'BRIEN, M.B. (Melbourne);  
Honorary Assistant Ophthalmic Surgeon, Victorian  
Eye and Ear Hospital.

In a recent article Dr. Flynn reported a very interesting case of retrobulbar neuritis in which a happy result was obtained by relief of nasal sepsis.

Cases of this disease are constantly coming under the care of every ophthalmologist, the aetiology in many remaining indefinite or at best being attributed to an obscure toxæmia. I would like, however, to stress the necessity for a diligent nasal examination, even where no nasal history exists. The following history of a patient whom I saw some time ago emphasizes this.

Miss J.D., aged twenty years, was first seen on March 20, 1924, complaining of a "scum over the right eye" for two days and of some pain on movement of the eye. Vision in the right eye was confined to the perception of hand movements. Vision in the left eye was  $\frac{5}{6}$ . The refraction in both eyes was +0.5 diopter. The right pupil was slightly larger than the left and there was only a sluggish reaction to light. The fundi and media were normal. The field of vision in the right eye was apparently full, in the left it was normal.

General and neurological examination revealed no abnormality. The teeth were healthy. No nasal history nor abnormal signs were present.

On the following day right vision had declined to perception of light only and on the same day the late Dr. Frank Andrew enucleated the tonsils which were unhealthy, and curetted the right ethmoid region.

Two days later the vision in the right eye was nil and for the following ten days the right eye remained completely blind.

We then decided that Dr. Andrew should open the sphenoid sinus which he had been unable to do at the previous operation on account of excessive hæmorrhage. Accordingly under local anaesthesia the right sphenoid was opened on April 3 and a polypus removed. The response to this was gratifying as within three days, on April 6, the vision in the right eye had improved to perception of hand movements and two days later the patient was able to count fingers at one metre. The fundus all the time presented no change in appearance.

Improvement was steadily maintained till May 22 when the vision was  $\frac{5}{10}$ , and pupillary reactions were normal. The disc at this time manifested a slight pallor. Four months later the vision in the right eye was  $\frac{5}{6}$ , and there was no evidence of previous trouble beyond the very slight pallor of the optic disc, the fields for white and colour being normal.

This patient was seen again during the following twelve months and no relapse was reported nor has any evidence of a disseminated sclerosis manifested itself.

The sceptic may say the result would have been the same in any case as many of these inflammations resolve spontaneously, yet the dramatic onset and more dramatic response to treatment must, I consider, be regarded as something more than coincidence or the effect of relief of congestion.

The extremely intimate relationship of the optic nerve canal to the ethmoid and sphenoid sinus must be remembered and the fact that the bony wall is occasionally deficient in these areas exposes the sheath of the nerves to direct contact with any septic process that may be there present. Whether these latent septic conditions of the sphenoid region often exist without obvious nasal signs or symptoms I do not know, but that they do sometimes so exist is evident from this case and must consequently be carefully excluded.

## Reviews.

## A HANDBOOK OF TREATMENT.

It is very questionable whether books on treatment detached from all other considerations are really very useful, although the steady production of certain standard works of this type indicates a demand.

The American seems to produce this type more than the British, and one of the best is that of Palfrey.<sup>1</sup> It is a very good specimen of its kind—it is much more than a mere index. Diseases are discussed at some little length and in recommending treatment the author insists upon a recognition of individual qualities and variations.

The mentality of both patient and family are recognized and considered, while the bearing of prognosis on treatment is emphasized as is seldom done in books of this type. Thus in the section on hydrophobia there is the importance of making all those about the patient recognize the hopelessness of the situation from the beginning; while in heart disease the opposite course is pursued of insisting on the surprising powers of recovery in what are apparently quite desperate conditions.

A paragraph in each section headed "Placement" is worthy of comment. By this is meant not merely the putting of the patient to bed, but also the whole atmosphere physical and mental which surrounds him. The child for instance with pneumonia may be better off in a hospital rather than nursed at home, the child with chorea certainly will be. The possibilities of good nursing, the accessibility to the physician, the effect of the relatives, the possibility of obtaining complete quiet or of gaining mental control all are factors which come into the question and are noted as the need for these is apparent.

The discussion on diet is sensible and the Hippocratic maxim, "Food or drink which is a little less good but more palatable, is to be preferred to such that is better but less palatable" though not quoted, is consistently followed.

The author writes in a pleasant, experienced strain, his advice is evidently that of one who speaks from actual practice (a note too often absent from many books of the present day) and the book is one that can be read with pleasure by new graduate or experienced physician.

It would be a book of great value for a young man commencing practice and is certainly well up in its class.

## FUNDAMENTAL PHYSIOLOGICAL PRINCIPLES.

"CLINICAL PHYSIOLOGY" by R. J. S. McDowall adequately fulfils the author's aim of presenting some of the facts of physiology with their application to general medicine in a form correlated with pathological and clinical teaching.<sup>2</sup>

The book may roughly be divided into four parts. The first part deals with the nervous system and the special senses of sight and hearing. The next is devoted to a consideration of the circulation and respiration. In the third section digestion and metabolism generally are reviewed, while the last hundred pages are devoted to a variety of subjects of clinical interest, among them being acidosis, oedema, fever, exercise, immunity, the autonomic system and the ductless glands.

There is an excellent selected bibliography of recent books in which references to original papers may be found, its value being enhanced by brief critical reviews of these works.

Throughout the book the author's intimate acquaintance with clinical problems is manifest and when he launches into the realm of theory, he is at pains to let this be known. No attempt is made to hide deficiencies in

knowledge of various medical and physiological subjects and lines of approach to certain problems are indicated for those interested in research.

The author has succeeded in marshalling many of the available facts in connexion with the endocrine glands from the maze of fiction which bewilders the student in these subjects. Criticism could be directed only to minor points. It is unfortunate that many obvious misprints appear in the text especially in the chemical equations, some of which are grossly inaccurate.

This book can confidently be recommended to those for whom it was intended, practitioners and senior students of medicine who wish to revise their knowledge of fundamental physiological principles on which the practice of modern medicine is founded.

## UROLOGY.

THE "Practice of Urology" by Hugh H. Young and David M. Davis is a welcome addition to the urological literature.<sup>3</sup> It represents the experience and procedures developed at the James Buchanan Brady Urological Institute which is part of the Johns Hopkins Hospital at Baltimore and a remarkable demonstration is thus given of what can be accomplished in a comparatively short time by a skilled team of enthusiasts working in a speciality under ideal conditions.

The various subjects are discussed in a scientific manner, the records are remarkable in their detail and both volumes are full of interesting suggestions as regards diagnosis and treatment. The work is profusely illustrated and the pathological aspect of each subject is developed more fully than is the case in most American textbooks. In each section full and typical histories are introduced and the results obtained in the 12,500 cases on which the book is based are critically analysed.

As is to be expected, the work of the Brady Institute is particularly emphasized and urology undoubtedly is greatly indebted to the skill and enthusiasm of Dr. Young and his collaborators. It is necessary only to mention the elaboration of a safe technique for perineal prostatectomy, for radical excision of the seminal tract for tuberculosis and for the removal of diverticulum of the bladder, as well as the invention of such special instruments as the prostatic punch, the boomerang needle holder and an ingenious urethroscope to acknowledge this indebtedness.

American and to a less extent French and German urologists receive ample acknowledgement, but as is often the case with American writers, there is little mention of the work of the British urological surgeons.

In such a large book it is impossible to review critically the whole field. The first volume deals exhaustively with physiological, pathological and clinical problems, the second mainly with operative procedures.

The methods of investigating renal function, the technique of decompression and the pathology of all types of urinary obstruction are clearly discussed. An important suggestion which should add much to the value of all records, is the use of standard anatomical drawings upon which the pathological lesions observed are marked at the time of examination.

In the chapter on urogenital infections and infestations the use of mercurochrome which was first introduced and studied at this Institute, is considered at great length. The question of chronic pyogenic epididymo-orchitis is dismissed rather shortly, while in genital tuberculosis the writers emphasize the frequency of involvement of the seminal vesicles. The value of tuberculin in the treatment of this affection is, contrary to the experience of most workers in this field, somewhat decried and extremely radical operations are strenuously advocated. In dealing with bilharziasis no reference is made to the researches of

<sup>1</sup>"The Art of Medical Treatment with Reference Both to the Patient and to His Friends," by Francis W. Palfrey, M.D.; 1925. Philadelphia: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 463. Price: 22s. 6d. net.

<sup>2</sup>"Clinical Physiology in Relation to Modern Diagnosis and Treatment: A Text-book for Practitioners and Senior Students of Medicine," by Robert John Stewart McDowall, D.Sc., M.B., F.R.C.P. (Edinburgh), with an Introduction by W. D. Halliburton, LL.D., F.R.C.P., F.R.S.; 1927. London: Edward Arnold and Company. Royal 8vo., pp. 432. Price: 21s. net.

<sup>3</sup>"Young's Practice of Urology Based on a Study of 12,500 Cases," by Hugh H. Young and David M. Davis, with the collaboration of Franklin P. Johnson; Volumes I and II; 1926. Philadelphia: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 1484, with illustrations. Price: £5 15s. per set net.

Lieber in elucidating the story of the life history, nor to the pioneer work of Christopherson on the treatment of this disease. Hydatid disease is dealt with in a moderately comprehensive manner, acknowledgement being made to the work of Nicaise.

Benign hypertrophy of the prostate is considered in great detail. The lengthy tables of symptomatology, the detailed results of various operative procedures and a full discussion of preoperative treatment illustrated by complete case histories give some index of the care and trouble taken over records and their analyses. It is to be noted that the authors put in a distinct claim for the American origin of the operation of suprapubic prostatectomy.

The chapter on neoplasms is good. A new term "nephroma" is introduced for the well-known Grawitz carcinoma. There is a full description of various endo-vesical manipulations together with several new and interesting modifications and attachments to the cystoscope. Accurate tables of the results of treatment by different methods are given, the benefits of radium implantation in malignant disease being especially emphasized. Tumours of the testis are fully considered although no definite pathological classification is given.

In Volume two the chapter on malformations is excellent, there being a very full bibliography especially with regard to the rarer conditions. The greater part of this volume is given up to the description and discussion of various operations, the illustrations of the different steps being clear and elaborate. In difficult nephrectomies the authors rightly condemn the leaving on of forceps or clamps.

It is natural that a great deal of space is devoted to perineal operations especially those for prostatic hypertrophy, prostatic cancer, genital tuberculosis and fistula. The difficulties, the complications and the comparative results are fully studied. This is in many ways the most interesting part of the volume as Dr. Young has been for long the active protagonist of perineal prostatectomy. It may be appropriate, however, to sound a note of warning and state that in our opinion these procedures for their successful performance necessitate a long experience and ideal operative conditions.

A new operation is also described for urethral stricture, although the true excision, as advocated by Hamilton Russell, is not discussed.

In testicular neoplasms the extreme malignancy is noted and a radical operation is advised, full reference being made to the work of Hinman.

The final chapters deal shortly with urological problems in children and an admirable description is given of the methods of staffing and administering a teaching urological institute.

These volumes may really be regarded as a collection of monographs, they contain much that is original, all phases of the subject are treated very fully and the production is all that could be desired. We can confidently recommend them to all who are interested in this speciality.

#### A COLLECTION OF ESSAYS.

MEDICAL men have different hobbies; of late years the publication of a collection of essays has become one of the most popular. The latest collection of these is entitled "Through a Consulting Room Window." The view is evidently more spacious than that usually seen from a consulting room. It embraces not only "a medical portrait or two," but literary criticisms of R. S. Surtees, Henry James and several others touched on in the final essay, a picture of "Smudged Country," a comparison of artists, scientists and savages and, most bold of all, a prophecy on what the future holds for medical women. Merely to attempt the last mentioned essay is proof of the writer's courage. The introduction to the whole book says that "all the essays are provocative, but they are never dull" and with this opinion every reader will agree. But one would naturally expect such an effect to be produced by an author who is both a Yorkshireman and a medical man, for both

are combative and dogmatic and somewhat prejudiced. When an author with this double qualification of birth and training has in addition a wide range of interests and reading, keen observation and insight and a happy lucid style, anything he writes must be stimulating and arresting. No one but a Yorkshireman could assign to R. S. Surtees the high place in literature which he does, for "Handley Cross" is now read, if read at all, in an abridged edition. On the other hand, no one but a medical man could give the life-like portrait of a general practitioner which appears in this volume.

Two essays will certainly provoke discussion. Writing on the subject of "Medical Women in the Future," the author treats the matter from the standpoints of economics and of modern feminism. From both standpoints he decides that medical women have no place in the sun. He argues that they must begin their medical studies when nineteen years old, that with the necessary post-graduate hospital experience they will be twenty-six years old before they can practise; future economic conditions will demand marriage at twenty-nine and the subsequent care of their family will later take all their energies till forty-two years old, because owing to economic conditions there will be no maidservants to assist them. On the feminist side he argues that no female medical genius has arisen or will arise. For the strain of general practice they are less fitted physically and intellectually than men; they have less will, initiative and force of character, therefore any special department like obstetrics or child welfare, if left to them, "must mean that discovery in that department must suffer." With such sweeping assertions no mere male reviewer dare clash swords, for "male defenders are often of slightly feminine make up"; therefore it must be left to the ladies to defend their medical hearths and homes. On one point, however, it may surely be said that the author is wrong, for he reiterates that the mathematical field is women's favourite field for excellency, when universal experience and the recent report of the London Education Committees bear the opposite testimony. The essay on "The Artist and the Savage" is vitiated by the mistake of the bygone scientific materialist who endeavoured to measure everything by scientific standards, forgetful that this can only apply to quantity and not to quality which is the alternative measure of art. It is not surprising therefore to find all artists classed either as children or savages, because apparitions and dreams enter largely into their stock-in-trade and because time and emphasis by repetition, assonance or alliteration are characteristic of the child mind. This attitude deprives his literary criticisms of weight, as for instance in his estimate of W. B. Yeats who seems to be his favourite poet. But the author wields a good broadsword. We read of Osler's "platitudinous essays"; Marie Corelli is the "servant girls' novelist" and Kipling expresses "the mind of the senior boy scout." While Kipling has imagination without intellect, Bernard Shaw has intellect without imagination! Provocative, but certainly not dull; stimulating in fact and to one who is not a partisan, delightfully amusing.

#### FOR FAT PEOPLE.

A CERTAIN wise man of bygone days once said that when a woman was not thinking about the salvation of her soul, she was thinking of the state of her uterus. Had this philosopher lived today he would have had to add a desire for a slim figure to a woman's worries. Not only women, however, but men and even medical practitioners are troubled by abnormal increase in weight. The philosopher could have solved his difficulties by recommending the anxious ones to study Dr. W. F. Christie's book, "Surplus Fat and How to Reduce It." This book, written for the public, is at once scientific, practical and easily understood. The author shows how the caloric value of food may be estimated. When the caloric value of the ingested food is adjusted to individual requirements surplus adipose tissue may be reduced with safety and according to the wish of the person concerned.

<sup>1</sup> "Through a Consulting Room Window: Being Literary and Other Essays from a Medical Hand," by W. C. Rivers; with an introduction by Arthur Ponsonby, M.P.; 1926. London: Methuen and Company, Limited. Crown 8vo., pp. 211. Price: 6s. net.

<sup>2</sup> "Surplus Fat and How to Reduce It," by W. F. Christie, M.D.; 1927. London: William Heinemann (Medical Books), Limited. Demy 8vo., pp. 114, with illustrations. Price 6s. net.



## The Medical Journal of Australia

SATURDAY, JULY 16, 1927.

### Medical Ethics.

THE policy of the British Medical Association is determined by the Representative Body. It must be assumed, until the matter has been tested and decided otherwise, that the declared policy of the Association is binding on the overseas Branches as well as on the home Divisions and Branches. It is true that the overseas Branches have a certain amount of freedom to establish their own policies, but no finding would be valid, if it were at variance with the declared policy of the Association. There would, however, appear to be no objection to the adoption by one or more overseas Branches of a resolution embodying a principle that had been accepted by the Representative Body and applying that principle more strictly or more effectively than the Representative Body had done. In these circumstances the discussion at the Representative Meeting in Edinburgh this month on matters connected with medical ethics should be watched with close attention by all members of the Branches of the British Medical Association in Australia.

The Council has included a recommendation in its report to the effect that the Representative Body should modify its findings in regard to advertisements in the medical press of institutions at which medical advice and treatment are provided. In 1924 the Representative Body resolved:

That the advertisements in the medical press of institutions professing to provide medical advice and treatment is a practice free from objection and such advertisements may include the names of the resident and attending medical officers.

The Council now proposes that it should be regarded as undesirable that any advertisement should be inserted in the medical press of a therapeutic institution, if the advertisement contains any laudatory statement of the form of treatment given or the private address or consulting rooms

or hours of a member of the medical staff, but that there would be no objection to an advertisement which contains the names and qualifications of the medical officers.

It has been the rule of THE MEDICAL JOURNAL OF AUSTRALIA to refuse to include in any advertisement of an institution for the care and treatment of patients the names of any medical officers attached to the institution. It has been argued that a medical practitioner giving his whole time to the institution would not derive any personal benefit from the advertisement of his name. The reply to this objection is that the medical officer of any institution today may be a private practitioner in competition with his colleagues tomorrow. It is generally admitted that all forms of advertisement of medical practitioners are objectionable. The Branches of the British Medical Association in Australia sanction a limited number of advertisements in stereotype form relating to changes of address, starting practice, resuming practice and the like. This permission is frequently abused. The vindicators of the practice maintain that it is useful as a means of informing patients where their medical attendant is or of warning them not to make a fruitless visit during his absence. On the other hand it attracts the attention of persons other than the advertiser's patients. When a practitioner is starting practice, it is a frank advertisement and it is difficult to reconcile the recognition of such an advertisement with the maintenance of the principle that no practitioner may advertise directly or indirectly for patients.

There is too much advertising by medical practitioners at the present time in the Commonwealth. Many sail close to the wind and adopt expedients whereby they can bring their names before the public without infringing any rule. Others are less crafty and risk being called to account. They appear to think that it is a safe gamble. There should be no necessity for advertisement of a medical practitioner. Good work becomes known in the ordinary course of events. The man who seeks lime-light, who is always anxious to have his name in the daily press or on the lips of the public, is rarely regarded as an authority by his colleagues who are

after all the best judges of real merit. The public does not understand the rooted objection of the medical profession to advertising. The pending High Court action of the British Medical Association is evidence of this. In these days of screaming advertisement it is necessary to take up a strong and uncompromising position. Every effort should be made to attack the matter without fear or favour. It is to be hoped that the College of Surgeons of Australasia will enforce the highest ethical rules and tolerate nothing remotely savouring of what Dr. Bolam designated oblique advertising. The Branches of the Association in Australia should tighten the cordon. The rules should be examined and if necessary modified, so that no offender can escape. This journal will refuse in the future as it has refused in the past to admit the names of medical practitioners in advertisements of institutions, no matter what the decision of the Representative Body may be.

### Current Comment.

#### SPIROCHÆTAL JAUNDICE.

THE term infective jaundice is used to include conditions which occur either sporadically or in epidemics. The multiplicity of their names indicates the lack of knowledge of their pathogenesis. Conditions are described as infectious jaundice, epidemic jaundice, acute catarrhal jaundice, Weil's disease, benign infective jaundice, infectious hepatitis and even as spirochætal jaundice when vague impressions only exist as to the spirochætal nature of the disease. From this confused mass infective hæmorrhagic jaundice due to the *Leptospira ictero-hæmorrhagicæ* must be differentiated. This organism is commonly found in rats and is transmitted by them to man. It was first described in 1914 by a group of Japanese investigators. The name Weil's disease has been used as a synonym for this disease, but in view of its frequent loose application already mentioned it would be well to abandon its use as Funk has suggested. Infective hæmorrhagic jaundice due to the *Leptospira ictero-hæmorrhagicæ* or spirochætal jaundice, as it may be called, is endemic in Japan and Egypt; it occurs epidemically in various parts of the world and may appear as a sporadic manifestation anywhere. During the war it became endemic in the rat-infested trenches and many soldiers were infected. Subsequently so many infections occurred in Scotland that the Scottish Board of Health made it a notifiable disease in 1924. Arrangements were then made for G. Buchanan who was working for the Medical Research Council, to

act as Commissioner for the Scottish Board of Health, to investigate all the infections notified and to study the disease. The Medical Research Council has now published a report of his investigations.<sup>1</sup>

Buchanan's investigation which is both clinical and experimental, was commenced in 1923. Since that time he has studied the condition of fifty-one persons suspected of suffering from spirochætal jaundice. The diagnosis was rejected as far as twenty-nine persons were concerned and confirmed in the remaining twenty-two. The disease was characterized by sudden onset with headache, body pains, gastro-intestinal symptoms with high fever, the occurrence of slight epistaxis, the appearance of jaundice about the fifth day, a fall of temperature at the end of eleven or twelve days and the finding of the specific spirochæte in the urine about the third week. This was the clinical picture in a typical mild case. It is similar to that described in other countries. The only variation of any importance was the infrequent occurrence of hæmorrhagic *herpes labialis* as compared with that noted by other observers. Blood counts were made in some instances. In the severe forms slight anæmia was present with reduced percentage of hæmoglobin (70% to 90%) and a variable leucocytosis (up to 20,000 cells per cubic millimetre). Spirochætes were found in the urine of seventeen of the twenty-two patients. Buchanan points out that the finding of spirochætes in the urine of these seventeen persons was not unequivocal. The spirochætes appeared devitalized and degenerated. This is explained by the acid reaction of the urine and the presence of bile therein. It was found by experiment that these properties of urine are not only inimical to the vitality of the leptospira, but also lead to the destruction of its characteristic morphology. By dark ground illumination the spirals of the spirochætes were not recognized, but they seemed to be indicated by a slight granular appearance which was more pronounced in stained films. In these circumstances it was necessary to rely in large measure on the results of animal inoculation for confirmation. This was found to be a matter of extreme difficulty. Thus in one outbreak forty-four animals, including four mice were used before confirmation of the clinical diagnosis was obtained. In only one animal did inoculation lead to the complete reproduction of the disease. In seven other animals "spotted" lung hæmorrhages were found. These were considered by Inada, one of the original workers who discovered the organism, to be a most important diagnostic sign in laboratory animals. Noguchi thought that an explanation of these difficulties lay in the possible attenuation in the virulence of the organism; he also noted that strongly acid urine and bile were inimical at the end of twenty-four hours. Buchanan holds that the latter are responsible and states that he has observed the rapid destruction of the organisms taking place on the stage of a microscope. It

<sup>1</sup> "Spirochætal Jaundice," by G. Buchanan; Special Report Series, Number 113, The Medical Research Council of the Privy Council, 1927.

is thus obvious that diagnosis of spirochaetal jaundice is not a simple matter. Buchanan holds that a typical clinical history with jaundice and the presence in the urine of granular spirochaetes is sufficient to justify a diagnosis. From the practical point of view this might be sufficient especially if the disease is known to occur in a particular district. If this view of Buchanan is accepted, however, it must be only a tentative acceptance; efforts should always be made to produce the disease in animals.

Buchanan does not discuss the question of differential diagnosis at all. It is obvious that the clinical features alone may resemble other forms of infective jaundice. Acute yellow atrophy of the liver may also bear a striking resemblance to spirochaetal jaundice. In this connexion reference may be made to a discussion on some work by Joseph Sailer in these columns in November, 1925. The presence of the spirochaete must always be the determining factor in diagnosis.

One further point should be noted in regard to diagnosis. Much will depend on the stage of the disease at which a patient has arrived when he first comes under the notice of the medical practitioner. The spirochaetes are stated to be present in the blood in very small numbers during the first seven days of the illness. Buchanan was able to examine the blood of only three patients during this stage and in none of them was he successful in isolating the organism. The spirochaetes were found in the urine of seventeen patients between the eighteenth and twenty-third days. They were not observed in the urine after the thirty-seventh day, except in one instance. He was able in two patients to determine the date of the appearance of the organism in the urine by the frequent examination of specimens. In one case they appeared on the twelfth day and in the other on the fourteenth day.

In discussing the question of mortality of the disease, Buchanan considers in addition to the twenty-two previously mentioned patients, nine coal miners whose illness was diagnosed as due to spirochaetal jaundice before the investigation was undertaken. Eight of these thirty-one persons died; seventeen were coal miners and five of them died. The pathological changes found at autopsy were confined chiefly to the kidney and liver. The kidney was invariably the seat of degenerative changes and areas of necrosis were present in some instances. The liver contained areas of necrosis and focal accumulations of cells. The liver changes described by Buchanan were not of the advanced type described by other authors. These consist of more or less complete destruction of normal structure with dissociation of liver cells, coagulation necrosis, pronounced biliary stasis and the occurrence of liver cell mitosis around necrotic areas. Capillary haemorrhages were found in most of the tissues and phagocytosis of red cells occurred particularly in the lymphatic glands and spleen. Spirochaetes were difficult to find in the tissues. The microscopical changes in the tissues of both human beings and guinea pigs affected by the disease were found to be strikingly similar and varied only in degree.

Another point discussed by Buchanan is the origin of the jaundice. In three of the animals inoculated by him with the disease there was no jaundice and in two of these typical haemorrhages into the lung were the only visible sign of infection. In the portal tract of infected animals there was frequently found an accumulation of round cells together with some polymorphonuclear leucocytes. This was more pronounced in the vicinity of the bile ducts, it was a pericholangitis. Stokes who first drew attention to this pericholangitis, suggested that the jaundice might be attributed to it. Other authors have thought that the jaundice is of haematogenous origin. Buchanan does not state that he accepts the view advanced by Stokes, but he concludes that in the early stages at any rate the jaundice is not of haematogenous origin. He has made numerous blood counts on guinea pigs and he shows that there is no appreciable decrease in the red cells on the third day after inoculation when jaundice as a rule is first noticed. He points out that the jaundice becomes more pronounced in spite of the fact that the blood count remains more or less steady until one or at the most two days before death of the animal. He concludes that the figures indicate the occurrence of a terminal and pronounced blood destruction which is no doubt instrumental in accentuating the jaundice just before death, but that evidence is lacking to prove that the jaundice is essentially haematogenous. It should be noticed that Buchanan nowhere mentions the performance of the Van den Bergh test in connexion with any of the patients in his series.

Buchanan discusses the mode of infection. From his experimental results and from the condition of the workers in certain coal mines he has concluded that human infection is more likely to occur as the result of the organism gaining entrance to the body through skin abrasions or by way of the eye and the nasal mucosa through contaminated hands than infection by ingestion. He has examined water from infected coal mines and has found leptospiral organisms in fungal slime hanging from the roof and in pit and surface waters. He produced typical spirochaetal jaundice by injecting a specimen of the slime into two guinea pigs. He points out that leptospiral organisms may exist as saprophytes in certain water and mud and that the saprophytic and pathogenic forms are stated by most observers to be morphologically indistinguishable. Buchanan specifically mentions a "water or saprophytic type." A saprophyte is described as a vegetable organism living on dead organic matter (*σάμπος*, putrid and *φυτόν*, a plant). He presumably regards the slime from the mines as containing dead organic matter. Otherwise it is difficult to see how an organism living in water can be regarded as saprophytic. The question may be asked whether a spirochaete can be called a saprophyte under any circumstances in view of the fact that it is a protozoon and therefore belongs to the animal kingdom. At the same time Buchanan is of the opinion that a saprophytic form ("non-pathogenic form" would be more correct) of the organism may assume pathogenic properties, although his work on this aspect is incomplete.



## Abstracts from Current Medical Literature.

### OPHTHALMOLOGY.

#### Barraquer's Operation.

J. R. SMITH (*British Journal of Ophthalmology*, April 1, 1927) writes a critical survey of the theory and technique of Barraquer's method of intracapsular extraction of cataract by the "erisifaco." The pump used to produce the vacuum produces also vibrations which according to Barraquer are all important in the dislocation of the lens by the rupture of the zonule. Smith, though admitting the vibrations, claims that they have no influence in the process of extraction. He admits Barraquer's skill and success with the method, but his experience in Northern India where the method is being tried, has been unfavourable. One disastrous accident occurred after another. Success was no better when Down's mercury vacuum apparatus was used instead of the pump. The author is convinced that the lens is dislocated by being pushed towards the vitreous and not by being pulled. The latter only results in bursting the capsule or in separation of the erisifaco from the lens. In any case it is a fallacy to suppose that less violence is inflicted on the eye when the lens is dislocated by direct traction on the zonule than when pressure is applied to the eye from without. For a given surface a sphere encloses the greatest volume, the increase of pressure is the same whether the sphere is dented in by pressure or pulled out.

#### The Nature of the Intraocular Fluids.

In the first three pages of his lengthy monograph W. Stewart Duke-Elder gives his conclusions as to the origin and nature and behaviour of the aqueous and vitreous humours (Sir Francis Laking Prize, 1926-1927). The present teaching of the nature of the mechanism of the formation and circulation of the aqueous humour is wrong. The aqueous humour is neither a secretion nor in the accepted sense a transudate from the blood. It is a dialysate from the capillary plasma, the essential dialysing membrane being the capillary walls. An interchange due to metabolic activity constantly occurs and an internal thermal current exists (as shown by the slit lamp), but the aqueous humour does not circulate actively through the eye, but is in equilibrium with the capillary blood. There is, however, a secondary, minimal intermittent circulation, the result of constantly recurring changes of pressure induced by muscular movements as well as by other means. The results of analysis of serum and aqueous show that in aqueous humour the total protein constituents are considerably reduced, sugars are present in the same proportion, basic radicles as sodium are re-

duced, while the acid radicles as chlorine are increased; that is, all the constituents of serum are present in aqueous humour, the colloids only in small amounts. When capillaries are in a state of dilatation, the permeability of their walls is increased and a larger proportion of colloidal molecules is able to pass through the walls. It has long been known that aqueous humour, reformed after paracentesis, alters in character. This altered aqueous the author calls plasmod aqueous. When the eye is punctured and aqueous humour is lost, the capillaries, deprived of support of the intraocular pressure, immediately dilate. Increase of all the colloids and diminished salt content was found in plasmod aqueous. That the increase of protein in the plasmod aqueous depends on the dilatation of the capillaries rather than the lowering of intraocular pressure was shown by its absence when paracentesis was preceded by the injection of adrenalin and cocaine behind the eyeball. The normal and abnormal constitution of the aqueous is best explained by the thermo-dynamical considerations which govern the formation of a dialysate from the blood. There is no evidence of any chemical energy being expended in the elaboration of a secretion or in the formation of a new substance.

#### Gold Staining of Corneal Scars.

S. R. GIFFORD AND A. STEINBERG (*American Journal of Ophthalmology*, April, 1927) discuss the subject of staining corneal scars with gold and silver solutions instead of tattooing. They conducted numerous experiments on the eye of rabbits and adopted the method on four patients. A girl of fourteen years had a *leucoma adherens* following *ophthalmia neonatorum*. The scar was outlined superficially with a four millimetre trephine and the epithelium inside was scraped off. Then a 4% solution of gold chloride was applied for four minutes. Adrenalin was then instilled. The next day the scar was almost black and was the same size months later. In a second patient the pupillary area of the scar was moistened with liquefied trichloroacetic acid, the epithelium was removed and 5% gold chloride solution, not neutralized, was applied for three minutes. The method was used in another patient to cover a white cataract in a blind eye. The cosmetic result was good.

#### Intraocular Pressure.

L. BOTHMAN AND S. J. COHEN (*Archives of Ophthalmology*, March, 1927) have carried out certain experiments on intraocular pressure coupled with direct ophthalmoscopic observation of the retinal vessels after injection with certain drugs. Adrenalin, pituitrin and nicotine when injected intravenously produced hypertension and nitroglycerine hypotension in the eye of dogs with a water manometer attached to a needle in the anterior chamber. By direct examination of

the retinae and chorioidal vessels in rabbits through the Gullstrand ophthalmoscope, injection of adrenalin was seen to cause a constriction of the chorioidal and retinal arteries and dilatation of the veins. The same was found with nicotine. With nitroglycerine a blanching of the chorioidal and retinal vessels occurred. These changes, noted by the direct observation of the vessels of the fundus, show quite conclusively that the changes in intraocular pressure must be due to changes in the volume of the intraocular blood vessels and especially those of the nervous system.

#### Unequal Pupils and Failure of Accommodation.

O. G. MORGAN AND C. P. SYMONDS (*Guy's Hospital Reports*, January, 1927) relate the history of four patients with rapid onset of unequal pupils and failure of accommodation. All were women between twenty and thirty-eight years of age. In three no response was obtained to the Wassermann test. The fourth patient manifested fever, diplopia and typical signs of a mild *encephalitis lethargica*. The authors contend that the condition in the first three patients may be regarded as of the same etiology.

#### Calcium Deficiency in Spring Cataract and Myopia.

D. J. WOOD believes that spring cataract and malignant myopia are associated with deficient calcium in the blood (*British Journal of Ophthalmology*, May, 1927). Young people with the pericorneal type of spring cataract were cured in a few weeks with "Afenil," a calcium chloride urea, but the cure was not permanent. It is found that to be effective calcium administration should be combined with parathyroid extract. Occlusion of the eye also is of great value. The same deficiency was found in progressive myopia.

#### Krukenberg's Spindle.

R. R. JAMES (*British Journal of Ophthalmology*, April, 1927) relates an instance of Krukenberg's spindle occurring in a woman of sixty-three. She had cataract and examination when the pupil was dilated revealed an oval pigmented patch situated vertically in the cornea and composed of fine brown dots. After extraction of the cataract the patient's vision was  $\frac{1}{20}$ . There was no trace in the other eye which was blind from detached retina.

#### Glaucoma in Morgagnian Cataract.

A. KNAPP (*Archives of Ophthalmology*, March, 1927) discusses the liability of Morgagnian cataract to occur in association with glaucoma and refers to several clinical histories. The cause has been variously stated, according to some the toxic products of the degenerating cortex are responsible, according to others the irritation of the ciliary body by the shrunken and subluxated lens. The painful attacks are suggestive of a low grade uveitis in which increased

tension is the most striking feature. Treatment is extraction of the cataract in its capsule, but the technique is not easy. Smith holds that hypermature cataract is difficult to extract in its capsule. It is unwise to allow a cataract in which the cortex is becoming fluid, to advance without an operation.

## LARYNGOLOGY AND OTOTOLOGY.

### Influence on the Optic Nerve of Negative Pressure in the Sphenoid.

LEON E. WHITE (*Boston Medical and Surgical Journal*, December 23, 1926) discusses the influence of negative pressure of the sphenoidal sinus on the optic nerve. He admits that it is puzzling why the opening of an apparently healthy sphenoidal sinus frequently benefits an optic neuritis. This result has led to an erroneous impression and has resulted in the performance of radical but unnecessary sinus operations. It is a well-established fact that patients with optic neuritis have obstruction to the ventilation of the posterior nasal sinuses and its cause may be a trivial abnormality of the septum or the mid-turbinate body. The author thinks that this condition of negative pressure probably favours migration of bacteria and toxins from the blood stream or lymphatics to the optic nerve, resulting in neuritis. If this hypothesis is sound, the operation findings of normal mucosa in the posterior sinuses is satisfactorily explained. The author gives details of the findings of other investigators on the symptomatology of negative pressure in other nasal sinuses, he holds that they favour this hypothesis. It is also suggested that further study may show that the aetiology of Bell's palsy, at present obscure, may be due to a similar reaction of negative pressure in the middle-ear region.

### The Chemistry of Cerebro-Spinal Fluid in Otitic Meningitis.

J. C. GREENFIELD (*Proceedings of the Royal Society of Medicine*, September, 1926) deals with the chemistry of cerebro-spinal fluid in otitic meningitis. First he details the chemical constituents of normal cerebro-spinal fluid and points out that these constituents have almost constant normal values in the fluid with the exception of urea and glucose which vary with the concentration of these substances in the blood. The barrier between the blood and the cerebro-spinal fluid is the choroid plexus, the function of which is to prepare the cerebro-spinal fluid from the blood by selected filtration. In the ventricles and subarachnoid space a little coagulated protein and ferments together with a few cells are added. When there is acute meningeal inflammation, the function of the choroid plexus is impaired and the barrier between blood and fluid is less complete. Thus the chemical composition of cerebro-spinal fluid approximates that of blood. Glucose,

however, behaves in an unexpected fashion, due probably to the action of the bacteria or ferments set free in the process of disintegration of leucocytes. Glucose tends to disappear from the cerebro-spinal fluid and as it usually increases in the blood, the disparity in the percentages becomes greater. The author lays stress on the importance of estimating the percentages of inorganic salts, especially the chlorides, in all cases of meningitis. He claims that more definite information as to the extent of the meningitis and prognosis can be obtained by this examination than by bacteriological examination. For in localized meningitis, such as that of otitic origin, the percentage of organic salts does not vary from normal, as it does in generalized meningitis, where a wider area is provided for interchange of substances from the blood to the cerebro-spinal fluid. The author claims to have proved these findings by numerous examinations and appends a table showing the percentages of crystalloids found in normal and meningitic cerebro-spinal fluid.

### The Surgical Approach of the Ethmoidal Cell System.

J. BOWRING HORGAN (*Journal of Laryngology and Otology*, August, 1926) outlines in detail the surgical measures used for dealing with supuration of the ethmoidal cell system. In his opinion several important questions have to be considered in the surgery of this region. The first question is that of the sacrifice or retention of the middle turbinate bone. After quoting the opinions of many writers on this subject he comes to the conclusion that the consensus of opinion is in favour of sacrificing the middle turbinate bone in intranasal operations. The second question is that concerned with the drainage or partial removal of the diseased area as opposed to a potentially complete exenteration. He points out that the term ethmoidectomy suggests a surgical impossibility and should not be used. In regard to repeated partial operations he holds that it is unreasonable to expect a patient to subject himself to the manifold inconveniences of multiple minor operations which are damaging alike to his tranquility and to the reputation of the surgeon. The third question deals with the frequency with which the ethmoidal sinus is involved alone as compared with that in which the disease exists in conjunction with a similar condition in one or more ipsilateral nasal sinuses. The author advocates the use of the Watson Williams suction syringe in order to gain knowledge as to the extent of an infection. It is exceedingly rare to find the ethmoid affected alone in nasal sinusitis and the propinquity of the antral and ethmoidal ostia is against a single infection. The fourth question discussed by the author is that of intranasal or extranasal approach. The author considers this under three headings: The first is the anatomical

standpoint and this includes visibility and accessibility. The second is concerned with security from operation risks and the third includes the possibility of preserving the middle turbinate. The transantral is the ideal method of operation; it conforms best to these three considerations. The technique is described in detail and consists of the Caldwell Luc method of opening the antrum, followed by opening into and exenteration of the ethmoidal cells through the superio-medial wall of the antrum. An intranasal antral opening is then made and the oral incision is closed. Finally the nasal cavity is inspected and any polypi are removed. The mid-turbinate bone is then removed only if it manifests definite widespread disease.

### Chronic Non-Specific Infections of the Lungs.

CHEVALLIER JACKSON (*Journal of the American Medical Association*, September 4, 1926) outlines the bronchoscopic and oesophageal phases of chronic infections of the lungs. He holds that the three fundamentals in the treatment of disease are the nature of the lesion, its situation and its cause. He emphasizes the fact that, although the pediatrician can gain valuable information from outside examination and although the radiologist's examination is of the utmost importance, it is by bronchoscopic examination alone that a lesion of the lung can be inspected. It is not a bronchoscopist's duty to undertake the treatment of lung diseases other than those resulting from foreign bodies in the lung, but his powers should be used as a routine in non-specific diseases. Long observation in a bronchoscopic clinic leads the author to the opinion that many cases of chronic lung suppuration are preventable. He gives details of chronic lung sepsis of varying duration which was eventually cured, when a foreign body, previously unsuspected, was located and removed. Oesophageal stenosis is a condition which gives rise to bronchial complications, a fact not generally realized. Apart from the removal of foreign bodies bronchoscopy is essential in cases of lung suppuration, at times to determine diagnosis and always for aspiration of pus from the abscess area. It is stagnation of pus in the lung in subacute suppuration which leads to chronic suppuration. As cough and ciliary action are insufficient to clean the abscess cavity completely, bronchoscopic aspiration is of great assistance. When no foreign body is present, bronchoscopy is contraindicated (i) when external surgery of the thorax is preferable, (ii) when the patient is moribund from other causes than asphyxia, (iii) when rupture of the pleura is imminent, (iv) in the presence of diffuse pneumonitis, (v) in young children, unless the surgeon is very expert. The author carries out his examinations and aspirations without any anaesthetic, but prescribes a sedative at times if advisable.

## British Medical Association News.

### SCIENTIFIC.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Rooms, Adelaide Street, Brisbane, on May 6, 1927, Dr. H. V. Foxton, the President, in the chair.

#### Injury to the Brachial Plexus.

DR. MILTON GEANEY showed a young man who, while at his work had sustained an injury to both his head and left shoulder. He was rendered unconscious and subsequently there supervened complete paralysis of all the muscles of the left arm with the exception of the pronators and the flexors of the wrist and fingers. A radiogram taken revealed no bony lesion, the lesion in Dr. Geaney's opinion being probably due to a stretching of some part of the brachial plexus, apparently that part supplied by the fifth, sixth and seventh cervical segments. Wasting had occurred also in the affected muscles. The accident had happened in February, 1926, and until December of the same year the arm had been kept in an aeroplane splint and there was no movement in the affected muscles. About that time, however, the patient had begun to gain slight control over the left deltoid muscle and at the time of the meeting the nutrition of the muscles was much improved and the patient had definite voluntary movement of the biceps and triceps and of the muscles of the shoulder girdle. The extensors of the wrist and fingers were not yet active, but Dr. Geaney considered the prognosis very good and expected his patient to recover full movement.

#### Thomsen's Disease.

DR. S. F. McDONALD then exhibited a young man suffering from the congenital condition known as Thomsen's disease.

#### Foreign Body in a Bronchus.

DR. WALTER CROSSE then showed a specimen of bone which he had extracted from the bronchus of a patient. The patient gave a history of having coughed and choked on a piece of bone while eating a stew. The choking had subsided after a while and been followed later on by a wheezing, very much akin to that of ordinary asthma. The foreign body which was fairly large, had subsequently been recovered from the patient's bronchus. The point he wished to stress was the wheezing complained of by the patient after the choking and coughing fit. This with such a history was almost pathognomonic of the presence of a foreign body in one of the bronchi.

#### Stricture of the Oesophagus.

DR. VAL McDOWALL then demonstrated a radiogram taken from a patient who had a triple narrowing of the oesophagus, due to swallowing a quantity of caustic at an early age.

#### Bronchiectasis.

DR. GRAHAM BROWN and DR. VAL McDOWALL then showed some very interesting lantern slides which had been taken from radiograms of bronchiectasis both in children and adults.

The slides illustrated the appearance of the lungs after the injection of "Lipiodol" and slides were also shown of the facial characteristics of children and young adults suffering from chronic antral disease primary to bronchiectasis. A slide was shown of a foreign body in the left posterior bronchus which had been present for some twelve years and which had produced an extensive degree of bronchiectasis in the left lower lobe. Many varieties of bronchiectasis, mostly secondary to chronic antral suppuration, were demonstrated by slides.

In reply to a question by Dr. J. G. Avery, Dr. Brown then outlined the technique of injecting "Lipiodol" into the bronchi. This depended largely on the physical properties of "Lipiodol" which was a pale yellow heavy oil, containing 40% of iodine in poppy oil, for the most part in chemical

combination. A drop of the oil in water sank to the bottom, but if allowed to spread on the surface, it would float. The technique of the injection of "Lipiodol" into the lung depended on these various factors. Being a viscous oil, it had first to be heated to about 37.8° C. (100° F.) done by immersing the container in hot water. A ten to twenty cubic centimetre glass syringe was needed and for injection a large calibre needle (about gauge fifteen) was required. The following were the methods of injecting "Lipiodol" into the lung: (a) Through the crico-thyroid membrane, (b) through the trachea, below the isthmus of the thyroid, (c) by the bronchoscopic route, (d) by the transglottic route.

It was advisable in some cases to give adults a little morphine beforehand and children some compound tincture of camphor. It was necessary also to anaesthetize the larynx thoroughly. This Dr. Brown did by swabbing with a 10% solution of cocaine and a 1 in 5,000 solution of adrenalin. The trachea was also anaesthetized and this could be done by injecting with the laryngeal syringe a few cubic centimetres of a low percentage solution of cocaine. Summing up, Dr. Brown said that in bronchiectasis the use of "Lipiodol" gave positive evidence of dilatation of the bronchi and that the resulting picture appeared to be quite pathognomonic. It was in his opinion the only method of confirming the diagnosis, the ordinary X ray picture giving little more than an indication of bronchiectasis.

The remaining lantern slides were those of patients showing the facial and general appearance of children and young adults suffering from this condition of the bronchi. These slides illustrated what was called the "pseudo-robust" appearance of such patients and Dr. G. Brown pointed out that the breadth of the faces was in some cases exaggerated. He had a theory that the presence of pus in the antra of young children tended to expand the upper jaws. Dr. Brown divided bronchiectasis in children into two groups: (i) That associated with and probably dependent upon antral or other nasal accessory sinus suppuration and (ii) that not so associated.

In conclusion Dr. Graham Brown said that cases belonging to the first group were becoming more and more common and, as the state of such children became very pathetic if the condition were allowed to drift on, he pleaded that more care should be taken to eliminate the presence of bronchiectasis, acute or chronic.

#### Goitre.

DR. GIFFORD CROLL, C.B.E., read a paper entitled: "A Review of Some Recent Work on Goitre" (see page 74). He illustrated his address with numerous interesting diagrams.

DR. LILIAN COOPER, in thanking Dr. Croll for his interesting paper, referred very briefly to radiotherapy in the treatment of exophthalmic goitre.

DR. GRAHAM BROWN said that he was rather confused about the relative quantities of iodine in a normal and in an enlarged gland.

DR. C. TUCKER asked what would happen with regard to the quantity of iodine present if a portion of the enlarged gland were excised.

DR. S. F. McDONALD adverted to the question of infection in goitre and referred to certain conditions occurring in parts of India and also to the valuable work of McCarrison on the subject. He wanted to know whether it was possible to substitute actual thyroxin for thyroid substance in the treatment of conditions due to thyroid deficiency.

DR. NEVILLE SUTTON thanked Dr. Croll for his presentation of the good work being done on the subject in New Zealand. He mentioned de Quervain's account of goitre and referred to the many and varied types of goitre described by various writers and authorities. In regard to Dr. McDonald's remarks about McCarrison's work, he (Dr. Sutton) thought that McCarrison had modified his opinion and stated that infection was merely an indirect cause, disturbing the iodine content. He referred to the difficult pathology on goitre and thought that the aetiology also was at present rather vague and obscure.



Dr. A. T. NISBET also mentioned the use and value of radiotherapy in goitre which Dr. Croll had omitted to mention. In his opinion, deep therapy was useless in every type of goitre other than the exophthalmic type. Out of forty-five or fifty cases which had come to his knowledge, one only had proved fatal; in the others the result had been apparently satisfactory. Radiotherapy, as well as surgery, had therefore a very definite and special place in the treatment of some forms of goitre.

Dr. LOCKHART GIBSON considered that the colloid substance of the thyroid gland should not be regarded or referred to as a tissue.

Dr. L. T. MEADE referred with disapproval to the very confusing terminology which was current on the subject of goitre.

Dr. H. V. FOXTON congratulated Dr. Croll on his paper. He thought that all present had gained something definite from the address which in his opinion had clarified much of the rather chaotic knowledge on the subject. He referred to the care to be taken in the treatment of goitre patients for ordinary surgical conditions (such as tonsillectomy).

Dr. D. G. CROLL, in reply, thanked his audience for their kind reception of his paper. Regarding the remarks of Dr. Lillian Cooper and Dr. A. T. Nisbet, *à propos* of radiotherapy in goitre, he said that in his address he had purposely tried to give the general opinion of the New Zealand Congress which was definitely against it. The good results of surgical treatment in exophthalmic goitre had been definitely established, whereas nothing equal to it had been done on the radiotherapeutic side. There was much to be proved and established in the X ray treatment of goitre and more progress had been made with surgery. In short he considered the question of X ray treatment to be still very open and quite unsettled. In answer to Dr. Graham Brown, with regard to the percentage of iodine present he explained that normally the total amount of iodine remained a constant whether the gland was enlarged or not. In those patients in whom iodine was deficient signs of myxœdema at once appeared and when the iodine content was excessive there resulted the usual signs of hyperthyroidism. Answering Dr. Tucker's question, as to what happened when portion of the gland was removed, he thought that probably the remaining part of the gland would quickly compensate and make up for the lack of iodine. In reply to Dr. Gibson, he said that the colloid portion of the thyroid gland could be called a tissue. It was rather a moot point, however, and should be left to the physiologist or the pathologist. Referring to the question of infection raised by Dr. S. F. McDonald, he said that in New Zealand they would not accept McCarrison's work. The important point maintained was that the iodine content was the primary factor; McCarrison's point really was that infection was only a secondary factor. With regard to Dr. McDonald's query about thyroxin as a substitute for thyroid extract, Dr. Croll pointed out that the former could be given intravenously and that it was very quick in its action. He was not certain whether thyroid extract could be given intravenously. Regarding Dr. Neville Sutton's mention of the varieties seen in pathological goitres, most goitres, he said, showed every variety of abnormality from the histopathological viewpoint. He thought that most of the changes, so varied in form, were of a degenerative nature and said that Drennan stressed the point that no goitre was simple. As for the alleged difference between Swiss and New Zealand findings, he thought there might be different etiological factors operating; but New Zealanders claimed that New Zealand was a most suitable country for the study of goitre on account of the geographical contour and the geological formation. There was perhaps more uniformity in New Zealand in the matter of investigation and examination. To sum up, he considered the whole question of goitre still a very open one and its worst bugbear was the fact of its recurrence. Dr. Meade had raised the question of the confusing terminology on the subject. In New Zealand they were averse to using a large terminology at all on the subject. Most of the classifications were more or less arbitrary and very confusing. Referring to the question of the nodules in, say, toxic

adenoma, he thought that, so far as he knew, they were simply stages in the degenerative process (either fibroid, hæmorrhagic, cystic *et cetera*, as the case might be). He explained further the so-called "toxic adenoma" and thought that the condition should be regarded as toxic, if there was excess of iodine in any given amount of tissue. In conclusion, with regard to the basal metabolic rate, he pointed out that they used a Benedict's portable instrument in New Zealand and kept regular records of the basal metabolic rate.

## ANNUAL MEETING.

THE ANNUAL MEETING OF THE WESTERN AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Claremont Hospital for the Insane on March 20, 1927, Dr. T. L. ANDERSON, the President, in the chair.

### Death of Dr. J. T. Anderson.

Dr. T. L. ANDERSON moved the following motion, which was carried in silence by the members, standing:

That this Branch of the British Medical Association records with deep regret the death of Dr. J. T. Anderson and its appreciation of the very great services which Dr. Anderson rendered to the Branch.

### ANNUAL REPORT.

In accordance with the custom of the Western Australian Branch, the retiring President, Dr. T. L. Anderson, read the Annual Report instead of delivering an address. The report is in the following terms.

### Annual Report of Council.

#### Membership.

The membership of the Branch has increased from 191 to 207.

It is with regret I have to report the death of Dr. J. T. Anderson who took a great interest in the Branch for many years and annually entertained the members at their annual meeting which through his kind invitation was always held at the Claremont Hospital for Insane. A letter of condolence has been forwarded to his widow.

I also have to report with regret the death of Dr. C. J. Quinlan, to whose relatives a letter of condolence has been sent.

#### Meetings of Council.

During the year the Council have had a strenuous time, having had fourteen meetings with an average attendance of six members.

There have been nine general meetings held with an average attendance of 29.

#### Annual Dinner.

The annual dinner was held this year at the Palace Hotel and was most successful, there being thirty-eight members present.

#### Ethical Committee.

I am glad to say it was only necessary to hold two meetings of the Ethical Committee during the year.

#### Clinical Reports.

During the year interesting cases were reported at general meetings by Drs. J. T. Anderson, F. Clark, B. C. Cohen, R. H. Crisp, N. Cuthbert, A. W. Farmer, F. Gill, H. B. Gill, H. J. Gray, F. A. Hadley, J. G. Hislop, J. J. Holland, A. Syme Johnson, C. Joyce, H. J. Lotz, S. V. McConnell, J. E. McGlashan, D. M. McWhae, G. Moss, H. W. Moxon.

#### Papers.

Interesting papers were read during the year by the following members: Mr. Bannan, Drs. F. Clark, F. Gill, H. J. Gray, J. G. Hislop, J. J. Holland, W. H. Moxon, O. Paget.

*Clinical Evenings.*

During the year a clinical evening was held at the Perth Hospital by the kind arrangement of Dr. T. L. Anderson and at the Children's Hospital by the kind arrangement of Dr. J. G. Hislop.

*Council Work.*

During the year the work of the Council has been particularly heavy. A few of the most important matters considered may be mentioned.

*Workers' Compensation Act.*

The new provisions of the *Workers' Compensation Act* which provide for the medical expenses being paid by the employer has given the Council a great deal of thought and anxiety during the year.

It has been stated on many sides by those interested in insurance companies that in many cases the doctors' charges are exorbitant. This Branch is under negotiations with the Underwriters' Association for the formation of a sub-committee containing three doctors who will have the mutual confidence of both the insurance companies and the Branch. This committee is being formed for the purpose of supervising medical accounts. I feel sure that nothing but good can come from such a committee.

The Government Actuary has submitted several accounts which he questioned, to the Branch, but in each instance the medical report has been satisfactory and the account paid without further question.

The exclusion of the injured worker entitled to compensation from the Model Lodge Agreement has at last been finalized and the medical profession therefore are entitled to claim fees not exceeding, however, £100. When they exceed this the member again reverts to be a lodge member entitled to free medical attendance, but no such cases have or are likely to occur. The question of the injured worker entitled to compensation from timber mill agreements has proved a far greater difficulty than was anticipated. However, in all timber mill agreements except two the agreements appear to be working satisfactorily. In the two under review both have proved most disastrous to our members; one mill fund closed for financial reasons having previously exploited the doctor by collecting all his fees direct and the last case (that of Yarloop) is by far the worst, as the Medical Fund refused to listen to any reason and dispensed with the medical officer's services. Their principal strength rests in the fact that they control the only residence a doctor can live in in the district.

We understand that a practitioner who is not a member of the Association has been appointed to this place. In all probability he will prove not to be a success and the Council hope that no practitioner will again apply for the position unless it is on British Medical Association conditions.

The case of injured workers under the *Workers' Compensation Act* receiving free treatment in public hospitals is another matter which has caused a considerable amount of trouble. The Board of Management of the Perth Hospital have agreed with the Branch's views and declined to accept injured workers entitled to compensation under the Act except for the period of danger or emergency and as soon as the patient is fit, he is removed. The fact also that the Perth Hospital is full, helps in the discharging for outside treatment of the injured worker entitled to compensation. But the difficulty does exist with the Fremantle Hospital Board who are endeavouring to get the honorary staff to treat such patients free and the matter is now in the hands of the Minister controlling hospitals who I hope will insist upon the principles laid down by the Branch being carried out, that is, that these patients shall be treated only in intermediate wards where their medical attendant may follow them and receive payment from the employer through the patient.

*Federal Model Lodge Agreement.*

During the year it was agreed to accept the Federal Model Lodge Agreement based on the New South Wales Model Lodge Agreement with amendments adaptable to this State. I anticipate it will be some time before finality is

reached, but this matter is being considered by the Federal Committee who are obtaining the information of all the Branches in Australia.

*Federal Representatives.*

Drs. F. A. Hadley and D. D. Paton were reappointed Federal representatives for 1927.

*Post Mortem Fees.*

As a result of several complaints by country doctors of inadequate fees for *post mortem* examinations the matter has been again raised by the Council with the Attorney-General and better conditions have practically been agreed to. We are only now waiting issue of the new schedule by the Minister for Justice.

*Hospital Act.*

A new Hospital Act was proposed by the Government last year and through the courtesy of the Commissioner of Public Health and his Minister the conditions proposed were examined by the Council and as they were of an administrative nature and not a medical nature, they saw no reason to suggest alterations. The bill, however, did not pass Parliament, but will doubtless go up next session.

*Salary of Full Time Medical Officers.*

As general increases to full time medical officers have been made by the Federal Government, representation was made by the Council to the State Government that they also should come into line and pay adequate salaries to full time medical officers. The Council trusts that this shall have the desired effect.

*New Dental Hospital.*

During the year a new dental hospital has been started, suitable accommodation having been obtained close to the Perth Hospital; the President of the Branch in each year has been selected by the Council as their representative on the Board of Management. An excellent superintendent has been selected from Melbourne who has Cambridge and London experience. The new Dental Hospital should be a great benefit to the general public and for the teaching of students. This hospital provides for the free treatment of patients in public hospitals and charitable institutions and also for people of slender means. Otherwise, the hospital refuses to treat those who are able to pay outside.

*Fellowship of Medicine and Post-Graduate Association, London.*

The Fellowship of Medicine and Post-Graduate Association should be of great value to any member who is going to London and who is desirous of taking up post-graduate work; full information is available of all the post-graduate courses offering in England.

*London Representative.*

Dr. T. P. Dunhill has acted as our representative for seven years and is not therefore eligible for reelection this year. The Council therefore have nominated Sir Jenner Verrall who will also represent Queensland and Victoria Branches.

*Ninety-fifth Annual General Meeting at Edinburgh.*

An invitation by the President-elect has been issued to all members visiting England to attend the Annual General Meeting at Edinburgh in July and the Council will be glad to know of any of its members who will be in England then.

*Office Bearers for 1927.*

Dr. T. L. Anderson, the President, said that two hundred nomination papers had been issued on January 27 returnable on February 22. Thirteen nomination papers were received back; eight members were nominated for various positions but not seconded, two members were proposed and seconded, but declined to stand for election. The fact

that five candidates were proposed and seconded for three vacancies on the Council necessitated an election.

Two hundred ballot papers had been issued on February 28, returnable on March 16 and after their issue and return being duly certified to by the scrutineers, together with the result of the poll, he declared the following office bearers elected:

**President:** Dr. A. H. Gibson.

**Vice-President:** Dr. J. Bentley.

**Honorary Secretary:** Dr. R. H. Crisp.

**Honorary Treasurer:** Dr. A. Syme Johnson.

**Members of Council:** Dr. D. P. Clement, Dr. J. J. Holland, Dr. E. C. East, the Principal Medical Officer (Dr. R. C. E. Atkinson).

**Ethical Committee:** Dr. G. W. Barker, Dr. H. B. Gill, Dr. W. H. Nelson.

Dr. Anderson said that in accordance with the alteration to Rule 38 which gave the Council power to appoint the Principal Medical Officer for the time being a member of the Council, Dr. Atkinson had been appointed at the last meeting of the Council as a member of the Council for the ensuing year.

#### Honorary Treasurer of the Branch.

Dr. Anderson said that Dr. D. D. Paton had held the position of Honorary Treasurer for two years and had declined to stand for reelection as he has found it impossible for him to devote the necessary time to the Branch. Dr. Anderson took the opportunity of thanking Dr. Paton on behalf of the Branch for his valuable services.

#### Honorary Auditors.

Dr. Anderson also took the opportunity of again thanking Dr. E. C. Dean and Dr. A. E. Randell for their valuable services as Honorary Auditors.

#### Induction of President.

Before vacating the chair as President, Dr. T. L. Anderson thanked the members of the Branch and especially the members of the Council, for their loyal support during the year. He considered that it had been an especially strenuous one. He stressed particularly the valuable work done by Dr. H. R. Crisp and Mr. Hancock.

He then vacated the chair in favour of the new President, Dr. A. H. Gibson.

#### Librarians' Report.

The Librarians' Report, signed by Dr. F. J. Clark and Dr. G. R. Troup, was read by Dr. F. J. Clark. The report is as follows.

The following journals have been received and placed in their containers during the year:

*Clinical Journal, Journal of Bone and Joint Surgery, Journal of Laboratory and Clinical Medicine, Urologic and Cutaneous Review, Mayo Clinics, The Practitioner, American Journal of Roentgenology, Brain, Guy's Hospital Gazette, British Journal of Tuberculosis.*

Owing to the Library being also the Board Room of the Perth Hospital, there is at present no continuous way of displaying the current journals. The shelves are at present occupied for the most part by out-of-date volumes. During the ensuing year it is proposed with the sanction of members to store away the out-of-date volumes and to have a separate shelf for each journal. In this way members may easily obtain access to any of the current journals. The journals for 1926 where practicable will be bound in due course.

We would welcome any suggestions from members regarding additions or variations to the journals already subscribed to.

#### Expression of Thanks.

The thanks of the meeting was tendered to Dr. J. Bentley, Inspector-General of the Insane, for allowing the Branch to hold the annual meeting at Claremont and for entertaining the members at tea before the meeting.

#### NOMINATIONS AND ELECTIONS.

THE undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

Graham, Ian Allister David, M.B., 1925 (Univ. Sydney), Thirroul.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

Considine, Henry Lockington, M.B., B.S., 1926 (Univ. Melbourne), Saint Vincent's Hospital, Melbourne  
McMahon, Frank Fitzroy, M.B., Ch.B., 1925 (Univ. Melbourne), Lilydale.

### Medical Societies.

#### THE MELBOURNE PÆDIATRIC SOCIETY.

A MEETING OF THE MELBOURNE PÆDIATRIC SOCIETY was held at the Children's Hospital, Carlton, on May 11, 1927, Dr. W. W. McLAREN, the President, in the chair.

#### Diaphragmatic Hernia.

DR. H. DOUGLAS STEPHENS presented a female infant, aged five weeks, a full-time baby born after the application of forceps under chloroform anaesthesia. The child had apparently been well until ten days old when she had a "turn" in which she gasped for breath and went blue and had some difficulty in breathing. From this time there had always been some trouble with respiration and a tendency to go blue round the mouth. These "turns" had at first occurred once or twice in the day, but they had become more frequent. The child was breast-fed and suckled strongly and the attacks occurred irrespective of taking the feedings.

Examination showed that the upper part of the sternum was slightly projected. Diminution of breath sounds was present on the left side of the chest and only occasional adventitious were heard. The child was always more content when lying on the face. Heart sounds were much more distinct on the right side than on the left and cardiac dullness was shown to extend beyond the right border of the sternum. The liver dullness on the right side was normal, thus excluding a complete transposition of viscera. The respirations were 68 per minute. The urine contained nothing abnormal.

Dr. Stephens considered the condition to be one of diaphragmatic hernia. Other conditions which had to be excluded were atelectasis, transposition of viscera and a collection of fluid in the left side of the chest. The diagnosis had been confirmed by X ray examination which showed an opaque meal present in the left side of the chest up to the level of the second costal cartilage. The contents of the hernia appeared to be numerous coils of intestine.

DR. DOUGLAS GALBRAITH said that most of the diaphragmatic herniæ found in the *post mortem* room were in adults of forty to fifty years of age and the majority were left-sided.

DR. G. RALEIGH WEIGALL quoted a young adult patient operated upon at the Alfred Hospital for a strangulated diaphragmatic hernia who had recovered completely.

DR. ROBERT SOUTHEY had seen a child suffering from repeated attacks of vomiting associated with pallor, malaise and often collapse. This child had died subsequently of bronchopneumonia and at autopsy a well defined right-sided diaphragmatic hernia had been found. This case was reported in full in THE MEDICAL JOURNAL OF AUSTRALIA of February 23, 1924.

DR. D. M. EMBELTON inquired whether artificial pneumothorax would be of any assistance to the abdominal operation in such cases.



DR. W. W. McLAREN considered that as the present condition of the infant appeared to be quite compatible with life, it would be advisable to wait and see if the child became any stronger before any radical operative treatment was considered.

#### Meckel's Diverticulum.

DR. J. W. GRIEVE showed a female infant, aged fourteen months, admitted to hospital with a history of diarrhoea for four days with blood in the motions for the previous two days.

When first seen the child had not looked acutely ill, but the stool had been characteristic of "intussusception" and contained a quantity of dark blood and little mucus, but no faecal material. Under general anaesthesia a sausage-shaped tumour had been felt apparently attached to the abdominal wall by a pedicle. Rectal examination had revealed only altered blood. It was considered that the child had an intussusception due to a Meckel's diverticulum and that it had reduced spontaneously. At operation Mr. J. G. Whitaker had found a large Meckel's diverticulum, enlarged mesenteric gland and a plum-coloured caecum, terminal ileum and proximal part of the ascending colon. The caecum had felt as though it might contain a polypus.

Since operation the infant had continued to pass blood sometimes in small quantities and at others in large amounts. The child was very pale, but continued to take its feedings well. Sigmoidoscopic examination had revealed nothing abnormal.

Dr. Grieve presented his patient for an expression of opinion as to diagnosis which he considered rested between Meckel's diverticulum with ulceration, polyposis and Henoch's purpura.

DR. MERVYN STEWART suggested that the condition might be one of recurring intussusception.

DR. H. DOUGLAS STEPHENS said that it was difficult to reconcile the absence of repeated attacks of pain and vomiting with a recurring intussusception, if the continued hæmorrhages were due to this cause. He rather favoured the possibility of a polypoid condition at the mouth of a Meckel's diverticulum.

DR. R. E. ALLEN stated that the mucosa of a Meckel's diverticulum was similar to gastric mucosa and postulated a condition analogous to gastrostaxis.

DR. DOUGLAS GALBRAITH suggested the possibility of a foreign body being the cause of the repeated hæmorrhages.

#### Scurvy.

Dr. Grieve's second patient was a female child, aged nine months, suffering from pains in the lower limbs for three weeks. The infant had been breast-fed for eight weeks, had then received a complementary feeding of "humanized" milk and finally "humanized" cow's milk only. Orange juice had been given, but only in very small amounts. Three weeks before admission she had commenced to scream and draw up her legs and to resent any handling. The mother had noticed a swelling in the region of the left knee joint, then the right lower limb just above the ankle joint had become involved.

The child had cried as soon as the bed was approached. There had been fusiform bony swelling over the lower end of each femur with some crepitus on the left side. No teeth had been present, but since treatment commenced two lower central incisors had appeared and were accompanied by a purpuric extravasation of the neighbouring gums. X ray examination had confirmed the diagnosis of scurvy. Definite improvement had occurred under treatment with orange juice which was given in doses amounting to sixty cubic centimetres (two ounces) every day.

This patient was a good example of a rare condition in Australia—acute scurvy.

DR. H. DOUGLAS STEPHENS said he was extremely interested to see a case of scurvy of such severe grade in a child of nine months who was fed on boiled milk. Such acute forms of the disease were more often seen in infants fed wholly on a patent food. It was his experience that

during the war period when such foods were unobtainable, that acute scurvy was less often seen.

DR. H. LAWRENCE STOKES stated that the most severe forms of scurvy that he had seen in London had occurred in infants fed entirely on a patent food.

DR. DOUGLAS GALBRAITH agreed that the X ray plates confirmed the condition as acute scurvy and were not at all suggestive of rickets.

DR. W. W. McLAREN was of opinion that most lay people regarded the orange juice as being given occasionally to regulate the bowels and did not give it in sufficient quantity to prevent scurvy.

DR. MERVYN STEWART considered that oranges were often too expensive for the hospital class of patient and suggested the use of tomatoes as a cheaper substitute.

DR. GUY SPRINGTHORPE agreed that tomato juice was quite effective and said that it was used extensively by Hess as an antiscorbutic.

DR. ROBERT SOUTHEY quoted the case of an infant suffering from scurvy which had been cured by the administration of the juice of canned tomatoes.

#### Pathological Specimens.

DR. REGINALD WEBSTER presented a very interesting series of pathological specimens prepared in colour. Three examples of pyonephrosis were shown, each due to a different cause: (i) To chronic infection with *Bacillus coli*, (ii) to involvement of the kidney by a retroperitoneal fibroliposarcoma and resulting in a urinary fistula, (iii) to an aberrant renal artery with obstruction of the ureter.

The commonest causes of pyonephrosis were firstly renal calculus and secondly a congenital dilatation of the ureter and renal pelvis and more rarely to tuberculous infection.

Another specimen of unusual interest was a large hydatid cyst which had been present in the cerebellum of a child, aged six years.

Several beautiful examples of pathological conditions of the heart included (i) malignant or acute bacterial endocarditis, (ii) involvement of the aortic valves during a previous attack of chorea and a recent bacterial endocarditis of the mitral valves due to a non-hæmolytic streptococcus, (iii) suppurative myocarditis, as a pyemic manifestation of osteomyelitis, with perforation of the ventricle and hæmopericardium, (iv) a curious malformation of the heart with deficient interventricular septum and a dilated pulmonary artery of which the pulmonary valves consisted of two cusps only.

## Post-Graduate Work.

### POST-GRADUATE COURSE IN BRISBANE.

A POST-GRADUATE COURSE in medicine will be held in Brisbane from August 1 to August 5, 1927. The course has been organized by the Queensland Branch of the British Medical Association. The fee for attendance will be two guineas, payable in advance. Applications for enrolment should be made at an early date. Members are requested to notify the Honorary Secretary if they are interested in any particular subject in order that arrangements may be made.

As the Brisbane Exhibition will be held in the second week of August, members attending the course are advised to apply for accommodation as soon as possible. A dance and bridge party will be held at the National Hotel Roof Garden on Monday, August 1, 1927, at 8 p.m., to which all members attending the course and their wives are invited. The annual dinner of the Queensland Branch will take place during the week.

The following is the provisional programme:

Monday, August 1, 1927.

Morning.—Lecture by Dr. F. L. Apperly.

Demonstration in the medical wards of the Brisbane Hospital.

Afternoon.—Demonstration in the Orthopædic Department of the Hospital for Sick Children by Dr. A. V. Meehan.

#### Tuesday, August 2, 1927.

Morning.—Lecture by F. L. Apperly.

Demonstration in the surgical wards of the Brisbane Hospital.

Afternoon.—Demonstrations in the medical wards and in the X ray Department of the Mater Misericordiæ Hospital.

#### Wednesday, August 3, 1927.

Morning.—Lecture by Dr. F. L. Apperly.

Demonstrations of X ray work, illustrating Dr. Apperly's lectures.

Afternoon.—Demonstration of Rubin's technique by Dr. M. Graham Sutton.

Demonstration of pathological specimens at the Museum by Dr. J. V. Duhig.

#### Thursday, August 4, 1927.

Morning.—Demonstration in urology at the Mater Misericordiæ Hospital by Dr. A. S. Roe.

Afternoon.—Demonstration of abdominal palpation by Professor J. C. Windeyer.

#### Friday, August 5, 1927.

Morning.—Demonstrations at the Baby Clinic by Dr. A. Jefferis Turner; talk on infectious diseases by Dr. J. B. McLean; demonstrations on the Schick test for diphtheria by Dr. D. Gifford Croll.

Afternoon.—Demonstrations in the surgical wards at the Mater Misericordiæ Hospital.

Professor J. C. Windeyer will deliver the Bancroft Memorial Lecture at B.M.A. Building, Adelaide Street, Brisbane, on August 5, 1927, at 8.15 p.m. The title of his lecture will be "Puerperal Infections."

The title of Dr. F. L. Apperly's three lectures will be "Modern Views on Gastric Function in Health and Disease."

### Correspondence.

#### ULTRA-VIOLET LIGHT.

SIR: While we must thank Dr. Molesworth for the collation of the material presented in his thesis published in the issue of June 18, 1927, it would be well to consider some of the observations that are in opposition to the idea that ultra-violet light is the cause of rodent ulcer. The conclusion, I think, must be that the case is "not proven." This idea of the etiology is not new, as reference to Sir G. Cheate's letter in *The British Medical Journal* of March 28, 1926, will show. The argument is that there is an analogy between the action of X ray and ultra-violet light in that both radiations ionize, that X rays cause malignant changes in the skin, that skin colour is a protective reaction against ultra-violet light, that ultra-violet light is a great irritant to skin not so protected and that patients in Australia, where ultra-violet light is plentiful, who have such skin, develop rodent ulcer.

Now it is as yet unproven that X rays are not present in the atmosphere at all times so that as a possible etiological factor they cannot be dismissed at present. Again, though it is true in general that an absorbed radiation produces its effects by ionization of the absorbing atoms, the resulting corpuscular radiation leaves the atom with a speed proportional to the frequency of the incident radiation, so that the difference of the speed of the particles resulting from the exposure of a tissue to X rays on the one hand and to ultra-violet light on the other is just as great as the initial difference between the respective frequencies.

Again, the Maoris, who live far from the equatorial zone, have dark skin. The Esquimaux and the Tierra del

Fuegians, despite the latitudes in which their lives are spent, also have heavily pigmented skin. The skin of the Chinaman grows lighter in summer and darker in winter. The bodies of dark skinned peoples who wear clothes and have worn them for thousands of years are dark like the exposed face and hands. The Sandwich Islanders and the Tierra del Fuegians have darker skin under the clothing than on their hands. Negroes have relatively white palms in spite of exposure to sunlight, and yet the axillæ which are extremely well protected, are relatively dark. Of Europeans the dark skinned show the greatest degree of skin colouration in response to exposure. Anæsthesia of the skin will inhibit the action of ultra-violet in producing pigmentation. Fair skinned people can add to their tanning in response to sunlight by the administration of resorcin. Ergotoxin in large doses prevents tanning so long as the effect continues. Leucodermatous patches develop tolerance for ultra-violet light without tanning. The lower lip usually develops epithelioma at the spot where it is protected by the pipe *et cetera* from the action of sunlight and incidentally at the spot where the stem is hotter than it is inside the mouth.

Finally, Alex Reyn, head physician of the Finsen Institute, Copenhagen, where patients have been treated since 1896 with ultra-violet light, and where 200 are now treated daily, says that among the thousands of cases that have been treated there, not a single case of lupus carcinoma has been reported; in fact the records show that the percentages of such cases of carcinoma is lower where ultra-violet is the method of treatment than anywhere else. He states that the ultra-violet light cures the lesion and so prevents the onset of malignant changes. As these patients are almost entirely of the type of complexion which Dr. Molesworth specifies as the requisite type for the development of epithelioma from exposure to ultra-violet light, it would have been anticipated that they would show a large incidence of malignant changes. The skin of twenty-five patients who had had considerable exposure to ultra-violet was examined microscopically and in not one case was there found any change involving the risk of epithelioma.

This is not the place to elaborate a theory, but it would seem possible to bring a case of "malign practice" against other electro-magnetic waves which would be equally as telling as that brought against ultra-violet light. Anyway, one feels that before any sweeping condemnation of sun-baking and its clinical *confrère* ultra-violet light is made, the case for the prosecution will need much more evidence than has so far been produced.

Yours, etc.,

BEDE J. HARRISON.

235, Macquarie Street, Sydney.

June 25, 1927.

### Proceedings of the Australian Medical Boards.

#### QUEENSLAND.

THE undermentioned have been registered under the provisions of *The Medical Act of 1925*, of Queensland, as duly qualified medical practitioners:

Barry, David, M.B., B.S., 1926 (Univ. Melbourne), Brisbane.

Holmes, Gordon Charles Wesley, M.B., Ch.M., 1917 (Univ. Sydney), Brisbane.

Lilley, Alan Bruce, M.B., Ch.M., 1926 (Univ. Sydney), Australian Institute of Tropical Medicine, Townsville.

#### Restorations to Register:

Barrack, Bruce Boyle, M.B., 1918 (Univ. Sydney), Brisbane.

Hirschfeld, Eugen, Staats Exam., 1888, M.D., 1889 (Univ. Strassburg), Brisbane.

## TASMANIA.

THE undermentioned have been registered under the provisions of *The Medical Act*, 1918, Tasmania, as duly qualified medical practitioners:

Grounds, Arthur Edwin Ernest, M.B., B.S., 1926 (Univ. Melbourne), Latrobe.  
Walch, Christine Martha, M.B., Ch.M., 1925 (Univ. Sydney), Hobart.

## LIST OF MEMBERS.

THE Honorary Secretary of the Victorian Branch has intimated that the names of the following should have been distinguished in the list of members by crossed swords:

Dr. F. A. Bouvier, Victoria Street, Dimboola, Victoria.  
Dr. Raleigh Clarke, Smythesdale, Victoria.

## Books Received.

IMHOTEP, THE VIZIER AND PHYSICIAN OF KING ZOSER AND AFTERWARDS THE EGYPTIAN GOD OF MEDICINE, by Jamieson B. Hurry, M.A., M.D.: 1926. Oxford University Press. Royal 8vo., pp. 134, with illustrations. Price: 7s. 6d. net.

PRACTICAL TROPICAL SANITATION: A POCKET BOOK FOR SANITARY INSPECTORS IN THE TROPICS, by E. P. Minett, M.D., D.P.H., D.T.M. and H., late R.A.M.C. (T.F.), and A. G. M. Severn, M.A., M.D., D.P.H.; School Notes by Mrs. Minett, M.D., B.S., D.P.H.; Second Edition; 1927. London: Baillière, Tindall and Cox. Crown 8vo., pp. 188, with illustrations. Price: 5s. net.

## Diary for the Month.

- JULY 18.—New South Wales Branch, B.M.A.: Organization and Science Committee.  
JULY 19.—Tasmanian Branch, B.M.A.: Council.  
JULY 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
JULY 20.—Western Australian Branch, B.M.A.: Branch.  
JULY 22.—Queensland Branch, B.M.A.: Council.  
JULY 22.—Eastern Suburbs Medical Association, New South Wales.  
JULY 26.—New South Wales Branch, B.M.A.: Medical Politics Committee.  
JULY 26.—Illawarra Suburbs Medical Association, New South Wales.  
JULY 27.—Victorian Branch, B.M.A.: Council.  
JULY 28.—New South Wales Branch, B.M.A.: Branch.  
JULY 28.—South Australian Branch, B.M.A.: Branch.

## Medical Appointments.

Dr. Keith Joseph Hill (B.M.A.) has been appointed Government Medical Officer at Chinchilla, Queensland.

Dr. Bedlington Howel Morris (B.M.A.), Dr. Walter Henry Russell (B.M.A.) and Dr. Frederick Steele Scott (B.M.A.) have been appointed Members of the Nurses Board of South Australia.

## Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxii.

ADELAIDE CHILDREN'S HOSPITAL, INCORPORATED: Honorary Physician to In-Patients, Honorary Surgeon to Out-Patients, Honorary Surgeon to Out-Patients, Ear, Nose and Throat Departments, Resident Medical Officer.  
MENTAL HOSPITALS DEPARTMENT, NEW SOUTH WALES: Temporary Junior Resident Medical Officer (Male).  
MENTAL HOSPITAL, PARKSIDE, SOUTH AUSTRALIA: Honorary Ophthalmologist.

## Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
	Australian Natives' Association. Ashford and District Friendly Societies' Dispensary. Balmmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies' People's Prudential Benefit Society. Phoenix Mutual Provident Society.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	All Contract Practice Appointments in South Australia. Boileroo Centre Medical Club.
SOUTH AUSTRALIAN: Honorary Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in Western Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	Friendly Society Lodges, Wellington, New Zealand.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

## Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and book-sellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £3 for Australia and £2 5s. abroad per annum payable in advance.



*Atony of rectum and sigmoid**After six month's treatment*

## DYSCHEZIA

*A* PROMINENT gastro-enterologist has said, "How often our elaborate and costly gastro-intestinal studies aimed at hunting down the cause of a chronic intestinal stasis leave us with negative results until at the lower end of the alimentary tract the physician's finger elicits the '*a priori*' cause of the patient's trouble."

Rectal constipation is very common. Its relief is simple when once it is discovered. Sphincteric stretching or cutting under a general anæsthetic, is the major therapeutic procedure. But lubrication, by softening the feces and preventing rectal impactions, permits of easy evacuation without mechanical injury to the delicate rectal mucous membrane and without obstructing the arteriovenous circulation in the rectum. Most rectal pathology is probably the result of rectal stasis, and rectal stasis has potentiality for harm both intra-intestinally and extra-intestinally. Chronic irritation of the rectum can only be relieved by lubrication therapy.

The regular use of Nujol minimizes friction over the denuded mucous membrane and allows of epithelization whether in a localized lesion, as in case of a fissure, or in the more generalized lesions of a proctitis.

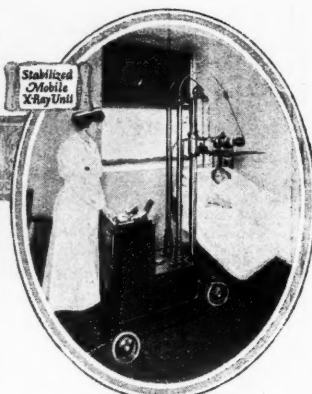
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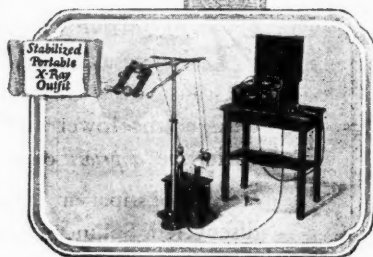
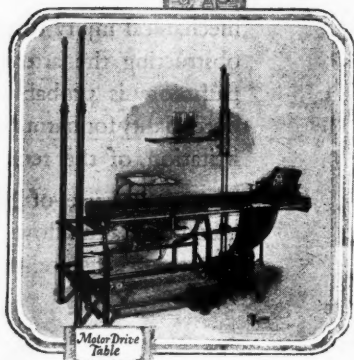
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